REFER TO ME

INTERESTING AND USEFUL FACTS.
MANUFACTURES,
DISCOVERIES AND INVENTIONS.
DISTINGUISHED PERSONS.
CATHEDRALS, ABBEYS, PRIORIES,
COLLEGES, CASTLES, HISTORY,
PRECIOUS STONES, METALS,
TREES, FRUITS, FLOWERS,
BIRDS, BUTTERFLIES, BEES, ETC.

By F. J. Middleton.

A THOUSAND SUBJECTS. NUMEROUS ENGRAVINGS.

LONDON:
G. T. GOODWIN, 8, PATERNOSTER ROW,
AND ALL BOOKSELLERS.

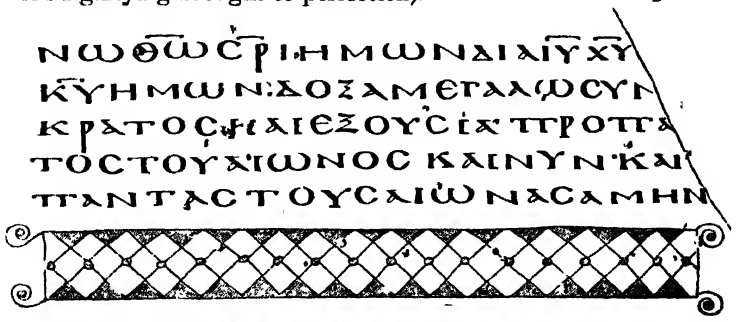
LONDON
PRINTED BY J. AND W. RIDER,
BARTHOLOMEW CLOSE.

REFER TO ME.

INTERESTING AND USEFUL FACTS.

1. **Alphabets.**—The numbers of letters contained in different alphabets are as follow:—Italian, 20; Bengali, 21; Hebrew, Syriac, Chaldee, Latin, and Samaritan, each 22; the French, 24; and the Greek consisted of only 16 letters until 399 B.C., when the Ionic alphabet of 24 letters was introduced; English and Dutch, 26; Spanish and Sclavonic, 27; Arabic, 28; Persian, 31; Coptic, 32; Turkish, 33; Georgian, 36; Russian, 43; the Ethiopic and Tartarian, each 202; and the Chinese hieroglyphics (each of which stands for a word) are above 80,000 in number.

The Coptic writing is the same as the ancient Egyptian, and resembles Greek in its appearance; indeed, some of the letters are the same. Many languages are derived from the *Sanscrit* (the word signifying brought to perfection).



FAC-SIMILE OF A PORTION OF ALEXANDRIAN MS.

Tacquet calculated that twenty-four letters might yield 620,448,401,733,239,439,360,000 different words; while Clavius calculates the

same number of letters will yield 5,852,616,738,497,664,400 words. In China the beginning of a book is what we should consider the end; the paging is near the bottom, instead of at the top corner, and marginal notes are written at the *top* of the page. In reading you go from right to left, and read each column from *top* to bottom. The Rev. William Milne, in his interesting work, *Real Life in China*, remarks, "To study the language accurately and thoroughly will tax every power a man has, of body and mind." *Alpha*, the first letter of the Greek alphabet, is used to denote the beginning of anything; while '*Omega*,' or the last letter, denotes the end; A *is the first letter* of the alphabet in all the known languages of the world, except that of Ethiopia, in which it is the thirteenth. Among the Romans A was a numeral letter, and signified 500; and with a dash at the top, thus, $\bar{A}$, 5,000. Numeral letters are those that are used for figures, as I, one; V, five; X, ten; L, fifty; C, a hundred; D, five hundred; M, a thousand.

2. Arithmetic.—Arithmetic came to us from the Romans. The Greeks were the first Europeans among whom Arithmetic arrived at any degree of perfection. The ten Arabic figures, 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, were unknown to the Greeks and Romans, and came into Europe from the Arabians by way of Spain. The Arabians are supposed to have received them from the Indians, who are very expert at counting on the *ten* fingers of the hand, from which it is thought the origin of the Arabic figures (as they are called) is derived.

3. Geometry.—Geometry is supposed to have had its rise among the Egyptians; from Egypt it passed into Greece. It signifies the art of measuring the earth. The length of a mile differs much in different countries.

	Yards.		Yards.
The English mile contains	1,760	The Spanish mile contains	5,028
„ Irish and Scotch „	2,200	„ German „	5,866
„ Russian „	1,100	„ Hungarian „	8,800
„ Italian „	1,467	„ Swedish „ }	7,233
„ Polish „	4,400	„ Danish „ }	

In France they measure by leagues. The small contains 2,933 yards; the great, 4,400 yards; and the mean, 3,666 yards.

4. Chronology treats of the proper measurement of time, and the fixing of dates of various events recorded in history. The beginning of the day was computed from sunrise by the Syrians, Persians,

Babylonians, and Indians. The *civil* day of the Jews commenced at sunrise; the *sacred* day at sunset. The Egyptians began their day at noon. The most ancient inhabitants of Italy computed the day from midnight. The Mahometans from one twilight to another. The day was divided into eight parts by the ancient Indians, Persians, and Tartars; each part containing 7½ hours. The Chaldæans and Arabians divide the hour into 1,080 scruples; or 18 scruples to a minute, and 60 minutes to an hour. The division of the week into seven days seems to have been known by almost all nations but the ancient Greeks, who divided a month of thirty days into three times ten, calling them the *second first* and *third fifth*, and so on. The use of weeks was received into Greece from the Egyptians. As Sunday is considered sacred and set apart by Christians, so is Saturday to the Jews, Friday to the Turks, Tuesday to some inhabitants of Africa. The Persians divided the year into 24 months, and the Mexicans into 18 months.

5. **Roman Months.**—The Roman year under Romulus consisted of ten months only, and commenced with March, which contained thirty-one days; April, thirty days; May, thirty-one; June, thirty; July (or *Quintilis*), thirty-one; August (or *Sextilis*), thirty; September, thirty; October, thirty-one; November, thirty; and December, thirty days. Numa Pompilius constituted two other months between December and March, January with twenty-nine days, and February with twenty-eight. The month of January was now placed instead of March for the commencement of the year. Thus the *Roman* year consisted of only three hundred and four days, and *Numa's* of three hundred and fifty-five. In the time of Augustus Cæsar, the order of the months was the same, but January, March, May, Quintilis, Sextilis, October, and December, had each thirty-one days; April, June, September, and November, thirty; and February in the common year twenty-eight, but every fourth year twenty-nine. In the month Quintilis, Julius Cæsar was born (in the year 100), therefore, in honour of him, the name was altered to July; and Sextilis, in honour of Augustus, was called August.

6. **Buildings.**—St. Paul's Cathedral, the Monument, Whitehall, and many of the London churches are built of "freestone," obtained from the Isle of Portland, in Dorsetshire. St. Paul's Cathedral was thirty-five years in building; it is four hundred and four feet in height. The Monument was erected to commemorate the great fire of London; it is two hundred and two

feet high. The spire of Strasburg Cathedral (France) is four hundred and sixty-six feet high. Versailles Palace was built by Louis XIV. It is now used as a museum. The tower of Rouen Cathedral (on the Seine) is made of iron, and weighs more than a million pounds.

7. **Imports.**—The imports to England are *raw cotton*, from the United States, the East Indies, and Brazil; *wool*, from Australia, the East Indies, Germany, and Cape Colony; *timber*, from America; *wine*, from Portugal, Spain, and France; *tea*, from China; *sugar*, from the Mauritius and the East and West Indies; *coffee*, from the East and West Indies and Brazil; *silk*, from China, the East Indies, and France; *flax*, from Russia and Holland; *corn* and *flour*, from the United States, Russia, Prussia, and France; and *gold*, from California, British Columbia, and Australia; *tallow*, from Russia; *indigo*, from the East Indies and Central America; and *madder*, from France and Turkey. From British India, jute, a substitute for hemp, being the fibre of an Indian plant. Bacon and salted meat from Denmark and Holland; above a million pounds of butter (yearly) from Holland and North Germany, and about 200,000,000 eggs yearly from France.

8. **Exports.**—The exports from England are *cotton goods*, to the United States, Brazil, Germany, and the East Indies; *cotton twist* and *yarn* to Germany, Belgium, and the United States; *woollen goods* to Holland, Russia, the United States, and Germany; *hardware* and *cutlery* to the United States, the East and West Indies, and America; *iron* and *steel* to the United States, France, and Holland; *linen* to the United States, Brazil, and the West Indies; *brass* and *copper* to Holland and France; machinery to the West Indies, Italy, and France; silk to America; *coals* to France, Holland, and the Baltic States; and *earthenware* to the United States and Brazil. Copper and brass to India, France, and Italy; leather and saddlery, including about four millions of pairs of boots, to the British colonies. The trade of London extends to nearly every port of the world. The number of British vessels engaged in the trade is above 25,000. The English colonies and foreign possessions are numerous and important.

9. **London** is the largest and richest city in the world. The great fire of London, in 1666, destroyed four hundred streets, thirteen thousand and two hundred houses, eighty-six churches, St. Paul's Cathedral, the Royal Exchange, Custom House, and many other public buildings.

10. Newspapers.—The first supposed to have been published in England was by order of Queen Elizabeth. It was called the *English Mercury*, and dates July 28th, 1588. It is still preserved in the British Museum. In the year 1709 there were eighteen weekly and one daily papers published; in 1795, seventy-two country papers, thirty-eight in London, thirteen in Scotland, and thirty-five in Ireland; in all, 158. Before a newspaper existed in London, there were private gazetteers, who made a living by getting scraps of intelligence in taverns and barbers' shops. The first paper published in America was the *Boston News Letter*, established in the year 1704. In 1775 there were four newspapers published in Boston and thirty-seven in the United States. In 1810 the number was three hundred and fifty-nine, in 1828 eight hundred and fifty-two, in 1840 sixteen hundred and thirty-one; in 1850 it had increased to two thousand five hundred and twenty-six, while in 1860 the aggregate number of copies was 426,409,978. Paris possesses about five hundred newspapers at the present time, 460 of which are devoted to art, science, and commerce. The most ancient is *Journal des Savans*, dating from 1665.*

AUTOGRAPH OF QUEEN ELIZABETH.

* The above was in print prior to the Franco-German war.

The oldest German newspaper was the *Postzeitung*, established in 1616. In 1858 M. Eugène Hatin calculated that there were 7,000 newspapers published in Europe, 500 in Asia and Australia, and 5,000 in America; and that about 3,000 of these were issued daily, and the average sale of each paper might be about 2,000 copies. The oldest illustrated paper dates 1643, entitled the *London Intelligencer*. This paper also contained the first newspaper advertisements. At a fancy dress ball given by the Mayor of Melbourne, a Mrs. Butler appeared as "the press" in a white satin dress, on which were printed the first pages of all the newspapers and periodicals.

11. **Coloured Glass.**—The different colours we sometimes see in glass, as blue, green, violet, purple, yellow, and red, are given to the glass while in a liquid state by means of metals.

12. **Chess.**—Dr. Robertson, in his history of Charles V., gives the following anecdote. John Frederick, Elector of Saxony, was taken prisoner by Charles V., and condemned to death. He was informed of this decree while at chess with Ernest of Brunswick. After a moment's pause he continued the game, and won. He was not, however, put to death; but after an imprisonment of five years, set at liberty. Chess is a very ancient game. Some authors attribute its invention to the Chinese; others to the Grecians; and again others to the Arabs and Hindoos. It was a favourite game with the Saxons. It is supposed to have been introduced into this country about 900. It was a favourite pastime of Canute the Dane. Chess was played upon a circular board in the fourteenth century.

13. **Pall Mall.**—In the reign of Charles II., a fashionable amusement existed called "*Pall Maille*," or "Pall Mall;" where a round ball was struck through an iron arch with a mallet. It seems much to have resembled croquet of the present day.

14. **Organs.**—The earliest account of an organ being erected in a church is in 757. It was a gift from Constantine Copronymus to King Pepin, and was placed in the church of St. Cornelius at Compiègne, in France. Alphage, Bishop of Winchester, erected one in 1001, which contained thirty bellows, requiring seventy men to put them in motion and pass the air into the 400 pipes.

15. **The Great Wall of China.**—This wonderful wall extends 1,500 miles, over the summits of mountains, across deep valleys, and wide rivers. It is built of grey granite. It is somewhat uncertain at what precise period it was erected, but it is thought by

Mr. Bell, who resided many years in China, that it was about 1160, to prevent the frequent incursions of the Moguls. It is about fifteen feet thick. The towers (of which there are several) are forty-eight feet high.

16. **Seven Wonders of the World.**—The Seven Wonders of the World are the "Pyramids of Egypt;" "The Temple, Hanging Gardens, and Walls of Babylon;" "Statue of Jupiter Olympius;" "The Temple of Diana;" "The Mausoleum erected by Artemesia, Queen of Caria, to the memory of Mausolus;" "The Pharos in Egypt;" and "The Colossus of Rhodes." The Great Pyramid was built by Cheops, a king of Egypt, about 900 B.C. The second one was built by Cephren, the brother of Cheops; and the third by Mycerinus, the son of Cheops. They are composed of polished stones. The Great Pyramid is 474 feet high. It covers an area of 559,000 square feet at the base. The Temple at Babylon is supposed to have been built on the pile of the Tower of Babel. The Hanging Gardens were made in several terraces, one over the other, the top one being the same height as the walls of the city (350 feet). The Statue of Jupiter Olympius was sixty feet high, and formed of gold and ivory; the throne of gold, ivory, ebony, and precious stones. The robe of the god was of gold, painted with figures of animals and flowers. In the left hand was a sceptre, on the top of which was a golden eagle; in the right hand a gold and ivory figure of Victory holding a wreath. The Temple of Diana was magnificent. It contained a statue of Diana, made of ebony. The temple is said to have been destroyed by fire; a second temple was built 540 B.C., which was burnt on the day on which Socrates was poisoned. The third one was burnt on the night that Alexander the Great was born. The Mausoleum was erected 353 B.C. It is thought to have been 140 feet high, and 113 feet by 93 at the base. The Pharos, watch-tower, or lighthouse at Alexandria in Egypt, was 453 feet high, and could be seen from a distance of 100 miles. It was wrought in stone, worked in marble ornaments. The Colossus of Rhodes was a brazen image of Apollo, 105 feet high. It was placed at the entrance of the harbour of Rhodes.

17. **Thistle.**—The Scotch national emblem, the "thistle," is said to have been adopted from the circumstance that, when about to be surprised at night by an invading party of Danes, one of them placed his foot upon the plant, and uttered a cry of pain, which roused the Scots to a sense of their danger.

18. **Titles.**—The first "King's Speech" ever delivered was by

Henry I., in 1107. A century later, King John first assumed the royal "We." "Grace" and "My Liege" were the titles given to Henry IV. Henry VI. was "Excellent Grace." Edward IV., "Most high and mighty Prince." Henry VII. was the first English "Highness;" and Henry VIII. was the first king complimented by the title of "Majesty."

19. **Ich Dien.**—The three ostrich feathers, with the motto "Ich Dien," which in German signifies "I serve," were added to the arms of the Prince of Wales in 1346, after the famous battle of Cressy.

20. **The Royal Arms.**—The motto of the royal arms of England, "Dieu et mon droit," "God and my right," was adopted by Richard I. in 1198. King William III. used the motto "Je maintiendray," "I will maintain." Queen Anne used the motto "Semper eadem," "Always the same."

21. **Scotland.**—The motto on the arms of Scotland is "Nemo me impune lacessit."

22. **Barometers.**—The barometer was invented by Toricelli, a pupil of Galileo, in 1644. In the Great Exhibition of 1851 a gigantic barometer was to be seen, the rise and fall of the fluid being indicated by feet.

23. **Kaleidoscopes.**—The kaleidoscope was invented by Sir David Brewster in 1814, for which he took out a patent. From the time the first one was made, about 200,000 were sold in London and Paris in three months.

24. **Thermometer.**—The thermometer was invented by Drebel, a Dutchman, in 1620.

25. **Mariner's Compass.**—The mariner's compass was invented in 1302, by Flavio da Melfi, the needle of which always points to the north. The magnet or loadstone attracts iron, and imparts its virtue to that iron. If the iron is red-hot, the magnet is attracted either in a less degree, or not at all.

26. **Telegraph.**—The electric telegraph was first brought into use in 1837, by Messrs. Cook and Professor Wheatstone.

27. **Telescopes** were invented by Zachariah Jansen, a spectacle maker at Middleburgh, in Zealand, in the year 1590. The first one made was twelve inches long; Galileo, an Italian, much improved it. He became quite blind from the constant use of his glasses, and much study. The microscope was invented about the same period.

28. **The Bank of England** was instituted 1694.

29. **Costumes.**—Little progress appears to have been made since the dark ages in taste and propriety of dress. During the Saxon era ladies wore long, flowing garments, and dressed the hair with elaborate pains. The Normans shaved the hair at the back of the head, and wore a crest of hair on the crown. In 1130-40 sleeves were very large. In 1485 the head-dresses were high, sticking out like horns. In the reign of Edward III. ladies' dresses were ornamented with the armorial bearings of their families. Pockets were worn for the first time. In Henry VIII.'s reign ladies invariably wore their hair hanging down the back at marriages. Queen Mary fined every man below the rank of a knight ten pounds for each day's offence of the *wearing of silk*, and a fine of one hundred pounds for the master who should fail to punish such offence in a servant. In Queen Elizabeth's reign the huge ruff was worn, which was sometimes supported by wire. About 1700, the head-dresses are said to have been such a height that the ladies were much taller than the gentlemen. About 1763, the fashionable head-dress towered full a yard above the crown of the head. The real and false hair had to be fastened together with thick cement, and plastered up for three or four months at a time. In 1778, the fashions were such, that when a lady had her hair prepared for a ball, she could not think of lying down, or,

BRIDEGROOM OF 1720.

BRIDE OF 1720.

indeed, going to bed, but had to get what rest she could bolstered up in a chair, with watchers engaged for the purpose. In 1782, the hair was stuffed with tow and wadding, and ornamented with pearls, feathers, flowers; or, indeed, sometimes with butterflies, caterpillars, birds, or animals. The use of fans began to be general about 1550.

30. **Mirrors.**—Mirrors were first made in London by Venetian workmen in 1673. They had been used in Venice for above a hundred years previously. The quicksilver is applied to the glass by pressure. It takes about a month to dry and drain a *large* mirror, and three weeks for one of moderate size.

31. **Roland and Oliver** were two of the most famous in the list of Charlemagne's twelve peers. Hence the saying (as both were considered equally remarkable for their exploits), "*A Roland for an Oliver*," or "as good as you bring."

32. **Picnics.**—The first mention we find of a picnic is on the birthday of Charles I. when Prince of Wales, when it was said every lord, knight, and squire should bring his own dish of meat, leaving it to their own choice what to bring.

33. **Crowns.**—The crown of oak leaves was esteemed the badge of martial honour; the laurel crown as the badge of triumph and victory. A circle of gold with nautical emblems was given to the first man who boarded an enemy's ship; also a golden circle to him who first scaled the walls of a besieged city.

34. **Deserts.**—The principal Asiatic deserts are in Persia and Arabia. The desert of Kerman is 350 miles long. The caravans crossing the desert often consist of as many as two thousand camels, extending over a space of more than a mile. The caravans of Egypt bring ostrich feathers, gold, and ivory from Abyssinia; and the caravans of Arabia bring coffee, spices, and perfumes. The camel is better able to cross the vast sandy desert than any other animal, on account of its being able to endure thirst to a great degree; the ostrich also, on account of the extraordinary swiftness with which it travels. Travellers suffer dreadfully from the intense heat and fearful thirst. The deserts in *some parts* are much beset by lions and other wild beasts. A railway now runs through the great desert in India.

35. **Rain.**—In some parts of the world rain never falls; thus in the desert of Sahara, in Africa, and in parts of Asia. Lieutenant Maury tells us that one inch of rain falling upon one-fifth of the Atlantic Ocean would weigh *three hundred and sixty thousand*

millions of tons. Rain is drops of water, carried from the seas and rivers through the upper regions of the atmosphere, where it is condensed, and falls again upon the earth in the form of rain. Lieutenant Maury tells us, again, "All the great rivers of America, Asia, and Europe, are lifted up into the atmosphere, and flow in invisible streams back through the air." The quantity of moisture supposed to be received from the atmosphere all over Great Britain in the year is estimated at 22,161,337,355 tons. Snow is vapour, first condensed, and then frozen. At a ball in Sweden, the room was so warm that several ladies fainted, while without the cold was so intense that the windows of the room were frozen so fast as to render it impossible to open them. An officer present broke a pane of glass; the cold air rushed in, and it *snowed in the room*. Snow is so very common in the arctic regions, that it falls in nine days out of ten in April, May, and June. There is a district in Siberia where snow *never* falls, and the sky is constantly clear. The cold is so intense in Hudson's Bay, that spirit of wine is the only thing that can be used in the thermometer, as mercury or quicksilver freezes in this climate.

36. Air.—What is air? As we ask this question, though we may *see* nothing, we feel sure air is a material substance, as when we take a glass bottle and plunge it into water, very little water gets into the bottle, because the *air* keeps the water out. It is on this principle a diving-bell is constructed; the air prevents the person in the diving-bell from being immersed in water. The surface of the globe contains 200,000,000 square miles, every mile contains 27,878,400 square feet; thus the number of square feet on the surface of the earth is 5,575,680,000,000,000. The pressure of air on every square foot is 2,160 pounds, or 12,043,468,800,000,000,000 on the face of the earth. A cask full of water or spirits will not run from the tap unless a hole be made in the top, because the air pressing into the tap forces the water, &c., *up*, whereas the air rushing through the hole in the top of the cask forces it *down*. It is for this reason we usually see a hole in the lid of a teapot.

37. Winds.—Wind is a body of air flowing from one place to another. Monsoons blow in a certain direction for a time, change at certain seasons, and blow for an equal space of time from the opposite point of the compass. From ten years' registers kept by the Royal Society, it appears that in London the wind blew from the south-west 112 days; north-east, 58; north-west, 50; west,

53; south-east, 32; east, 26; south, 18; and north, 16. In Scotland west winds have been observed to blow for 230 days; east winds for 135. The sirocco blows for several days together; its medium heat is calculated at 112°. It is very fatal. In Palermo, in Sicily, the inhabitants shut their doors and windows, and hang wet blankets inside the windows to exclude the air. This wind prevails in Greece, Italy, and other parts of Southern Europe. It is occasioned by currents of heated air from the African deserts. The samiel blows in the deserts, where the effect upon travellers is sometimes fearful. If killed the limbs mortify, and come asunder when touched. The simoom is a hot wind felt in Egypt, Arabia, and Syria. Hurricanes occur most frequently in the West Indies. Tornadoes are sudden gusts of wind from *all* points of the compass. They are most frequently felt in the western parts of Africa. The sand-flood of Africa has overwhelmed all the land capable of tillage west of the Nile.

38. **Rainbows.**—Among remarkable rainbows are some which have been almost entirely of a blood-red colour. These have been supposed to portend war, plague, or pestilence. Rainbows have been seen on the grass formed by the drops of dew, suspended on the spiders' webs. On December 28th, 1863, a primary and secondary rainbow was observed united to the arc of a third iris, at Mytica, Greece. A triple rainbow was observed at Belfast, in Ireland, on November 14th, 1826. It remained till the setting of the sun, having been seen first about three or four p.m. The colours were very bright, the middle bow was supposed, beyond doubt, to have been caused by the reflection of the sun in the water.

39. **The Aurora Borealis.**—The Aurora Borealis, or Northern Lights, appears in the polar regions in August, and continues till May. It is brightest from December to March. The inhabitants of Finmark believe it is occasioned by immense shoals of herrings in the polar seas, their sudden turn in the water causing a luminous appearance. The Laplanders believe it is the souls of their departed friends dancing about. The American Indians have the same idea, while in Siberia it is thought to be spirits fighting in the air. It is said by some that the phenomenon is occasioned by the reflection of the sun upon the snow.

40. **Luminous Arches** sometimes precede or accompany the aurora borealis, but they are rarely seen. One of the most

brilliant ever observed was on the 27th August, 1846, about nine o'clock p.m. Its breadth was greater than a rainbow, only pure brilliant white, without the prismatic colours. The height of these arches from the earth has been variously estimated from 150 to 1,000 miles. They are generally seen from east to north, or west to south. An aurora was observed the same evening, but it was not very bright.

41. **Volcanoes.**—There are three volcanoes in Kamtschatka; Mount Hecla in Iceland, Mount Etna, and Mount Vesuvius. Mount Etna is 10,000 feet in height. The irruption of lava in 1669 destroyed 5,000 habitations.

42. **Mount Vesuvius.**—The first eruption of Mount Vesuvius on record occurred in the year 79, when Pliny, a celebrated philosopher, was suffocated with the sulphureous smoke. The principal volcanic mountains are Mount Etna in Sicily, Mount Vesuvius in Naples, and Hecla in Iceland. The eruptions from Mount Etna are sometimes seen at a distance of 168 English miles by those who sail on the Mediterranean Sea.

43. **Caves of the Earth.**—The cave of Adelsberg is near the village of that name, in the province of Carniola, Austria. The river of Penka enters this cave; on the wall of a large gallery some names and inscriptions were found, dating from 1213 to 1600. By the shock of an earthquake the entrance was closed, and when reopened, after a considerable time, a skeleton was found with one arm clasped round a pillar. There are many very curious parts in this cave, one of which, called the ball-room, is beautifully illuminated on Whit Monday. A gallery formed by nature serves for the musicians. Fountains seem to have been frozen into stone. There are many statues of pure white crystal, as perfect as if they were the work of art. The cave of Cacahuamilpa has an entrance 70 feet high and 150 feet wide. The interior consists of several halls, the first one 200 feet by 170, and 150 feet high. The crystals are hanging from the walls in many colours, and around may be seen silvery stalactites, trees, pillars, and porches. A party visiting this cave in the night were startled by the appearance of a fierce leopard, who with loud roars, after glaring at the visitors (to him probably most unexpected), walked back again into the deep darkness. The second hall is still larger than the first, being 400 feet long. There in a gallery are rows of gigantic crystal cauliflowers, each leaf we are told perfectly represented. The most curious thing is a large organ, the pipes when struck giving

out a deep sound—the deep tone of the bass from the large centre pipes, and the shrill tones of the treble from the smaller ones." The organ is surrounded by regular petrified benches. In some other caverns the sound of music has been observed by persons striking the pillars, &c., with a stick. The cavern *del Guacharo*, in South America, was discovered by Humboldt. This cave is remarkable for its crystals of plants, some showing the richest colours. The cave is inhabited by thousands of a bird called the "Guacharo."

There is an ice-cave in Hungary, where the more intense is the heat without, the greater the cold within. There is a similar one in Russia; another in France. Derbyshire is famous for caverns. Poole's Hole, in this county, is so called because an outlaw of the name of Poole once lived in it. This cave contains various masses of crystals; one called "Queen Mary's pillar," another, "The Flitch of Bacon." The interior resembles a Gothic cathedral. The rocks are nearly three hundred feet in height at the entrance of Peak cavern in Derbyshire. Roger Rain's House is a rock from which water continually drops. The cave is 2,250 feet long, and 620 deep. Here again is formed a kind of music chamber. The cavern of Dunmow Park, near Kilkenny in Ireland, is a great curiosity. The spars are varied and very beautiful. Fingal's Cave in Scotland is supported by natural basaltic pillars. The great Kentucky cavern, in America, covers a space of eight acres.

44. Geological Changes.—Some changes of land and water that have taken place within the last hundred years or so are very remarkable. Great part of Sweden and Norway is rising above the sea, at the rate of some feet every hundred years. Brighton, as a fishing village in 1560, covered land which the sea now occupies, and over which the chain-pier has been made. Rye is now two miles distant from the sea, whereas in the time of the Plantagenets it was a cinque port. At points on the Suffolk coast dwellings and fields existed where the sea is now eighteen or twenty feet deep at *low* water. Dunwich was a place of some importance formerly, and the seat of the first East Anglian bishopric; where woods extended for two or three miles *then*, *now* all is water. Many changes have taken place in Norfolk. The churches at Ravenspur, Spurn, and Withernsea have all been at different times entirely washed away, and in many places whole towns and villages destroyed. Aldborough church, Suffolk, was in 1786, 2,044 yards from the sea, while in 1853

it was distant only 1910. In many other places the distance is greater in the same space of time, and in some parts of Great Britain, where the sea rolled centuries ago, may now be seen fields of corn, farmhouses, churches, and trees. Again, in parts, *sand*, instead of *water*, has swept away villages, or buried them beneath a drift. In Cornwall, where all was once highly cultivated land, may now be seen hills rising several feet above the level of the sea, formed by sand; and in Ireland the villages are in parts nearly buried on all sides by sand, but which the inhabitants have cleared away, so as still to reside in their old homes. Other changes may be noticed, as, for instance, peat, used as fuel, is formed by decayed forests, some of which were burnt by the Romans, others have decayed with age. Moss growing over the wood forms in time peat. In the peat Roman coins have been discovered, supposed to have been hid in the trunks of some of the forest trees; also axes and links of chains; and sometimes, though rarely, a human body has been dug up in a state of good preservation, with garments belonging to a very early period. Many landslips have occurred in Kent and Dorsetshire, some of which have been very extensive.

45. **Earthquakes.**—The great Lisbon earthquake, November 1, 1755, was felt in Great Britain. Many shocks have at times been felt in England, and some severe ones in Scotland. Many centuries back, thirteen cities in Asia Minor were swallowed up by an earthquake, and Antioch has been visited three times very severely. In the first, which took place in 115, the whole of the city was destroyed. Earthquakes of an awful description have at various times taken place in Lisbon, Java, Sicily, Venezuela, Aleppo, Constantinople, Damascus, Smyrna, Chili, and other parts of the world.

46. **Precipices.**—Some of the principal precipices in Great Britain are Windcliff in Monmouthshire, Penman Mawr, and the Lover's Leap in Derbyshire. In India the pathways among the mountains are called ghauts. The Alpine precipices are very numerous, and the precipice of Table Mountain, in South Carolina, descends 900 feet to the sea. There are also some tremendous ones in Switzerland.

47. **Mountains.**—The Peak of Teneriffe, in Africa, is 12,358 feet high; Atlas, 12,500 feet; Geesh, 15,000 feet; Mont Blanc, 14,000 feet above the level of the sea. Chimborazo, in South America, is 21,000 feet high; the Peak of Himalaya, in the East

Indies, 25,000 feet; and Dhawalagiri 26,000 feet high. Ben Nevis, in Scotland, is 4,368 feet. The mountains of Mourne, Downshire, are 3,000 feet; Snowdon is 3,571 feet; Cader Idris and Penman Mawr are very lofty. Mickle Fell, in Yorkshire, is 2,600 feet.

48. **Murren**, in Switzerland, is the highest village in Europe.

49. **Wolf.**—The last wolf killed in Scotland was in 1680, by Sir Erven Cameron, of Lochiel.

50. **Sir William Wallace**, the hero of Scotland, was captured by the English in 1305, and was taken first to Dumbarton Castle, and thence to England. He was executed August 23, 1305.

51. **Origin of Hawking.**—Hawking has been traced to the middle of the fourth century. It is said that Frederick Barbarossa invented this sport. It was a favourite amusement of King Ethelbert, and continued to be very fashionable to the end of the Saxon era. Edward III. was also very fond of hawking. Ladies, too, accompanied the gentlemen, and also practised the diversion themselves. It was performed on horseback and on foot. The female hawk (called a falcon) is more courageous than the male bird. The Norwegian breed was in old times in high esteem in England. The same kind is now found chiefly in Wales and the north of England. In Edward the Third's reign it was accounted felony to steal a hawk, and to take the eggs or nest was considered so great an offence that the person found doing it was imprisoned for a year and a day, and fined at the king's pleasure. When a hawk was not flying at her game she was usually hoodwinked with a cap or hood fitted to her head, and on each leg was hung a bell "of sweet tone." The bird was so highly valued that the king of Scotland sent Edward III. a falcon as a present, which he graciously received, and rewarded the falconer who brought it with forty shillings. In the reign of James I. Sir Thomas Monson gave £1,600 for a cast or brace of hawks. Hawking declined at the end of the 17th century; and it is hoped, not to be revived.

A LADY AND HER HAWKS.

52. **Telescopes.**—The Greeks and Romans used long tubes in the same manner as we use telescopes. The tube of Dr. Herschel's grand telescope is thirty-nine feet four inches in length, and four feet ten inches in diameter. The surface of the mirror is four feet in diameter, three and a half inches thick, and weighs 2,168 pounds. It magnifies *six thousand times*. It was commenced 1785, and completed 1789. Newton's great reflecting telescope was invented in 1668. It was presented to the Royal Society in 1671, by whom it is carefully preserved, with the inscription,—"THE FIRST REFLECTING TELESCOPE, INVENTED BY SIR ISAAC NEWTON, AND MADE WITH HIS OWN HANDS." It magnified thirty-eight times. Fifty years after Newton's invention a large one was made by Hadley. Again fifty years elapsed, and Sir William Herschel's was constructed; and yet another fifty years passed, when the Earl of Rosse produced his magnificent instrument. Hooke is said to have proposed the use of a telescope to see *animals in the moon*. It was to be upwards of 10,000 feet long. (See also No. 27.)

53. **The Sun** is ninety-two millions of miles distant from the earth; its magnitude is upwards of 1,384,000 times that of the earth; its density, one quarter that of the earth.

54. **Mock Suns** are generally about the size of the true sun. When more than one is seen they are tinged with prismatic colours.

55. **Moon.**—The moon's surface contains 14,898,750 square miles, and its solidity 5,408,246,000 cubical miles It revolves round the earth in twenty-nine days twelve hours and forty-four minutes; and round the sun in 365 days, or one year. The distance of the moon from the earth is 236,267 miles. It would require *ninety thousand full moons* to afford moonlight equal to common daylight when the sun does not shine out and his light is partially obscured to us by clouds. The moon borrows her light from the sun. Volcanoes and mountains are seen on her surface through telescopes.

56. **Meteors.**—The dates of the principal November star showers are as follow:—902, 931, 934, 1002, 1101, 1202, 1366, 1533, 1602, 1698, 1799, 1832, 1833, 1866, and 1867. By various authors the fall of stars in 902 is said to have been very beautiful. Condé mentions "an infinite number of stars were seen during the night, scattering themselves like rain to the right and left, and that year was known as the year of stars." On the night of November 9, 1866, about 9 p.m., a meteor of unusual size and beauty was ob-

served towards the south-east, and on the 13th of November in the same year the writer saw one in the north-east direction far exceeding the others in size, and which appeared to burst in a variety of colours. The fall of meteors in November, 1866, was one of the most remarkable ever seen. It is supposed there will not be such another for thirty-two years from 1866-7; that is 1898-9. An Italian astronomer, M. Schiaparelli, supposes the August ring of meteors to agree with the comet of 1862. Dr. Peters has since said the November ring of meteors agrees with the comet of 1866. The November meteors of 1867 are described as being the most brilliant seen in America since 1833. They were of various colours, red, green, crimson, and yellow. The meteors of 1833 are said to have fallen as thickly as an ordinary fall of flakes of snow, or about the rate of 36,000 per hour, which lasted for seven hours. Some of them were of great size, not less than a mile in diameter.

57. **Fireballs**, which still remain of doubtful origin, are more often seen in tropical climates than in the more temperate regions. They wing their flight with considerable velocity. A remarkable one was seen in Italy in the year 1676, passing at the rate of about 160 miles a minute. Wherever it approached a hissing noise was heard. It appeared twice as long as the moon one way, and was estimated to be about one mile by half a mile. Another, on August 18, 1783, burst and reunited several times. It was seen in Great Britain, France, and Italy. When it disappeared a tremendous report was heard in Lincolnshire and Kent. Two bright balls led the way, followed by eight others, red, blue, yellow, and green, and beautiful reflections of various bright colours. The velocity of these is estimated at one thousand miles a minute.

58. **Thunder.**—We may estimate the distance of a thunder-cloud by counting the number of seconds that pass between the flash of lightning and the first sound of the thunder: 1,142 feet is allowed for every second. Sheet lightning is never known to do any injury. Clouds are frequently highly charged with electricity. In 1772 a bright cloud was seen at midnight, in the island of Java, that emitted flames of fire, which destroyed everything for twenty miles round; about 2,000 human beings and many thousand head of cattle were killed. A similar one, in 1757, tore an English ship to pieces at the island of Malta.

59. **Mountains.**—Ben Nevis is 4,368 feet high; Ben Lomond rises to a summit of 3,195 feet; Ben More is 3,818 feet; Ben Lawers 3,945 feet; Ben Aven 3,967 feet; Ben Macdui 4,390 feet.

Ben Wyvis has never more than once been known to be free from snow within the memory of man, which time was in September, 1826.

60. Grotto of Antiparos.—Antiparos is a small island in the Archipelago. The celebrated grotto, or cavern is of great extent and beauty. The first person in *modern* times who explored it was Magui, an Italian traveller, but it appears to have been known in very remote ages. The grotto, as described by a more modern traveller than Magui, is 120 yards wide, 113 long, and 16 yards high. It is composed of crystallized white marble; the roof, a vaulted arch, hung all over with icicles of white marble, some ten feet long, and as thick as a man's waist; from these festoons of leaves and flowers, of white marble, said to be "so extremely glittering that it is impossible to look upon them without dazzling one's eyes" "The sides of the arch (continues this account) seem planted with trees of white marble, in rows one above another. The floor is rough and uneven, with red, blue, green, and yellow crystals growing out of it in an irregular manner." Voices in speaking and singing are said to be so loud as to be nearly deafening. The grotto is approached by passages, at the end of each of which is a deep precipice, down which visitors descend by ropes or ladders. The passages are composed of different coloured marbles, green, red, and in some cases pure white. Beautiful indeed must the grotto be, but fearful the dangers that lie in the way, according to the various accounts we read from the pen of those who have ventured, but who appear to have been fully repaid at their journey's end by the magnificence of the scene. By torchlight the effect is wonderful.

61. Posts were established in London, and in most towns in England, Scotland, and Ireland, in 1633. The postage rates then were twopence for every letter under a distance of 80 miles, fourpence from 80 to 140 miles, and sixpence above 140 miles. A general post office for the United Kingdom was established in 1711.

62. Wines.—Port wine comes from Oporto, in Portugal. Lisbon wine from Lisbon, the capital of Portugal. Madeira wine is brought from the Madeira and Canary Isles, in the North Atlantic Ocean. Sherry comes from Xeres, and Cadiz-Mountain wine is made from the grapes that grow on the mountains of Malaga. The same grapes, and a particular kind that grow only at Alecant, are made into tent wine. Tokay, hock, Rhenish, and Moselle, are all made in Hungary and Germany. Muscadel is made from the

grape having the flavour of musk. Burgundy has its name from the province where it is made. Claret comes from the neighbourhood of Bordeaux. Constantia is a very rich, thick wine, made at the Cape of Good Hope, where also is made a commoner kind, called Cape wine. Currant, damson, cowslip, and elderberry wines are made in England. Champagne is made in England and France. Wines were first made in England in 276.

63. **Honey.**—Honey is a sweet vegetable juice, collected from various flowers by the busy bee. The bees of Attica and Mount Hymettus furnish the finest honey in the world. The wax is also excellent and abundant. Honey collected from some plants is poisonous to men, from others it is hurtful to the bees. The honey of Narbonne is beautifully white. The bee, or "honey-fly," as it was formerly called, was well known in ancient times, as we may judge from the frequent mention of honey and the honey-comb in the Holy Scriptures.

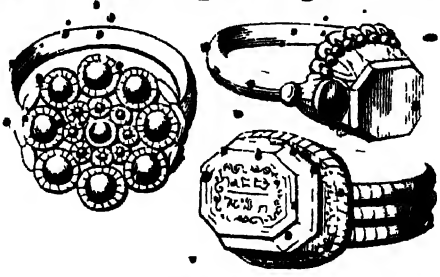
64. **Gnats.**—In the year 1736 common gnats rose in the air from Salisbury Cathedral in columns so much resembling smoke, that many of the inhabitants of the town thought the building was on fire. A similar instance of a more recent date is recorded in the history of Norwich. In 1766, at Oxford, six columns were observed a little before sunset, both perpendicular and oblique, attaining to the height of fifty or sixty feet. In Belfast, in the summer of 1842, two columns of gnats rose to the height of thirty and sixty, and sometimes even eighty feet; and on one evening (June 24th) as many as from two to three hundred distinct columns were visible at one time.

65. **Pens.**—Goose quill pens are supposed to have been in use among us for above five hundred years. Many of the pens used in England come from Hudson's Bay, Hamburgh, and Ireland. The Turks and Moors write with reeds to this day. Large numbers of geese are kept in the fens of Lincolnshire for the sake of their quills or wing feathers, the smaller feathers or down under the wings being used for stuffing beds and pillows. A steel pen passes through fourteen stages before it is finished. One ton of steel will produce two millions of pens.

66. London was founded by the Romans in the first century.

67. In the fifteenth century the price of a cow was 7s.; of an ox, 13s. 4d.; of a sheep, 2s. 5d.; of a hog, 2s.: but until 1440 the nominal pound contained more than twice as much as in the present day.

68. Rings.—There are many interesting facts relating to rings. The mention of them is very ancient. Photius says, "A man having become tired of his wife presented her with a ring of divorce." In olden times, at a marriage, rings bearing the names of the bride and bridegroom were handed round to the guests. Lot-rings were used for settling priority among soldiers in Homer's day. The ring placed upon the lips was a sign of silence. Magistrates and physicians are said to have worn them from the time of Hippocrates. Rings have been the cause of war. Seal-rings appear to have been very ancient, also the custom of giving a ring on birthdays.



MOORISH RINGS.

69. Bells.—Bells were first used in the time of Charlemagne. The great bell of St. Paul's weighs 8,400 lbs., and cost £385 17s. 6d. The great bell at Moscow weighs 443 772 lbs.; it is sixty-seven feet four inches in circumference. The bell of St. Peter's, at Rome, weighs 18,000 lbs., that at Florence 17,000 lbs., "Great Tom" of Christ Church, Oxford, 17,000 lbs., and "Great Tom" of Lincoln, 9,894 lbs. There is a valley in Nottinghamshire where a village is said to have been swallowed up by an earthquake, and it is the custom for the people of the village to assemble on Christmas morning to listen (as they say) to the ringing of the church bells underground. Some years since the bells of the churches in Jersey were collected and sent to France for the purpose of being sold to defray the expenses of a civil war; but the ship in which they were conveyed foundered, and everything was sunk. Since then, before a storm, the fishermen always say they hear the bells ringing in the deep in St. Ouen's Bay. Bells were first used in the Greek empire in 864; in France as early as 550; and for churches generally in 900; in monasteries about a century earlier. The first peal of bells was at St. Peter's at Rome. The first peal in England was hung at Crowland Abbey, Lincolnshire, 960. Bells used to be baptized in churches in 1000—1060. The bells in China have always been made of a mixture of tin and copper. They are of different shapes, those of the

ancients being flattened, instead of round. One at Peking, used for announcing the hours of the night, is 13½ feet in diameter. 12½ feet in height, and 42 feet in circumference; the weight upwards of £20,000 lbs. There are bells in all cities of China for marking the watches of the night. The night is divided into five watches. The bells strike one for the first watch, repeated every few minutes, two for the second, and so on to the fifth. Drums are sometimes used in the place of bells. The bells of the ancients were small.

70. Clocks.—Of the first two clocks known in England, one was placed over the gateway at Westminster and the other at Canterbury in the time of Henry III. Clocks were first manufactured in England in 1368. A clock sent by Pope Paul I. to King Pepin of France was thought to be the only one in the world (750—760). The first clock seen in Europe was given by Charlemagne's secretary to king Abdallah, of Persia. A clock was made by a Genevan mechanic which contained three figures; a shepherd, a negro, and a dog. The shepherd played tunes upon his flute when the hour struck, the dog barked, and the negro gave the hour in French. Water clocks were first used in Rome 158 B.C. First clock placed in a church about 913. Clocks were made to strike by the Arabians, 801. The first one that went well in England is now in Hampton Court Palace. The famous clock of Strasburg was completed by Isaac Habrecht, about the end of the sixteenth century. A globe stands before the clock showing the motions of the heavens, stars, and planets. Saturn is carried about in thirty years; Jupiter in twelve; Mars in two; the Sun, Venus, and Mercury in one year. There are two tables in the clock showing the eclipses of the sun and moon from 1573 to 1624. Another table in the centre shows the days for one year, the equinoctial days, the hours of a day, the minutes of an hour, Easter, and other feasts, and the dominical letter. Another part shows the geographical description of Germany, and the names of the inventor and all the workmen. The planets are shown for their particular day, as the sun on Sunday, &c.; a terrestrial globe shows the minutes, the quarter, and the half-hour. A figure of a boy turns the hour-glass when the clock has struck, another boy puts out a rod at each stroke. Four other statues, representing spring, summer, autumn, and winter, and four old men strike the quarters. A cock placed on the top of this wonderful work of art crows loudly twice a day, and claps his

wings. Parts of the clock contain rare pictures, the courses of the moon, &c. This clock is said to require winding up only once in a hundred years. Two curious clocks were some years since invented by an Englishman, and presented by the East India Company to the Emperor of China. They were in the form of a chariot, under which was the face of the clock, about the size of a shilling, which would strike, repeat, and go for eight days. "A lady," we read in a short account of this ingenious invention, "sits in the chariots; on her finger is a little bird composed of diamonds and rubies; the body of the bird contains the wheels, though in size only the sixteenth part of an inch. The bird flutters its wings for some time when the clock strikes. An umbrella over the lady's head contains the bell, and the clock is further ornamented with flowers, and ornaments of gold and precious stones; the little ruby and diamond birds (which appear to be flying away with the carriage); a figure of a boy in gold pushes it behind, and over his head is a flying dragon." Mr. Arnold, a watchmaker in London, presented George III. with a watch set in a ring.

71. **Pendulums.**—Pendulums for clocks were invented 1656.

72. **Watches.**—Pocket watches were brought to England in the reign of Queen Elizabeth, in the year 1577. They were invented at Nuremberg, in Franconia, Germany. The Emperor Charles the Fifth of Germany used to amuse himself with making watches.

73. **Sundials** invented 558 years B.C.

74. **Music.**—The musical scale was invented in 1022.

75. **Balloons,** in our day, are filled or inflated with gas. The first one ever thought of was in 1782, by two brothers in France, John and Stephen Montgolfier. Two or three attempts failed from the balloon bursting or otherwise becoming damaged, but at last one was completed which rose to the height of 1,440 feet. In it was a sheep, a cock, and a duck. It fell to the ground 10,200 feet from the place whence it started. The first aërial adventurer was M. Pilatre de Rozier, who ascended to the height of 84 feet; at the second experiment he ventured 210 feet high, and at the third 262. These experiments were conducted by means of *fire* instead of *gas*, from which the balloon at times ran a risk of being entirely consumed. The first experiment with gas was made by two brothers, the Messrs. Charles, one of whom took a voyage in the air by moonlight, when he described the prospect as truly beautiful; the clouds seemed to

ascend from the earth. He rose this time to the height of 10,500 feet. Mr. Glaisher made an ascent for scientific observation five miles in height. The sound of a watch ticking was like a clock, and the rustling of the leaves of a book like a gale of wind. Glaisher and Coxwell made an ascent from Wolverhampton in July, 1862. The height attained was 23,760 feet. The temperature was 24 degrees. The aëronauts felt all the symptoms of sea-sickness. The ringing of a bell was distinctly heard. When at an altitude of three miles they heard a clap of thunder. As they descended they saw a shadow of the balloon on the earth, surrounded by prismatic colours. In another account given by Mr. Glaisher, August 21, he mentions the barking of a dog being heard at a height of two miles. In a subsequent ascent Mr. Coxwell and Mr. Glaisher reached a height of six miles. Blindness and faintness came on, and the cold was so intense, Mr. Coxwell could only open the valve by pulling the string with his teeth, having lost the use of his hands. At an ascent, midsummer, 1863, the highest point reached was four and a half miles. Fog was above and below. Mr. Green went from London to Weilburg, crossing the Channel. On June 16th, 1857, Mr. Coxwell and two companions travelled 250 miles in five hours. In 1804 Biot and Gay Lussac ascended from the Conservatoire des Arts. At an elevation of 8,600 feet the thermometer was 56 degrees. The second time Gay Lussac ascended he went alone, and attained the height of 22,977 feet. Mr. Glaisher says, at a height of five, six, or seven miles the blue of the sky is the brightest, because the air is almost deprived of moisture. The earth is visible at a height of four miles. On another occasion, Coxwell and Glaisher passed through a snowstorm at a height of 14,000 feet. There were no flakes, only crystals. On Monday, October 2nd, 1865, Mr. Glaisher made a night balloon ascent. The appearance of London is described as one vast conflagration when at a height of 1,000 feet.

76. Coins.—Halfpence were first coined January, 1800. Farthings were coined in silver in Henry VIII.'s reign, 1522; in copper in Charles II.'s reign. Gold was first coined in Venice in 1276. Penny pieces were coined in England 1797. They were reduced in size in 1806. The copper coinage of Scotland is of more early date than that of England. Hammer-money ceased to be current in England in the reign of William III.

77. Money formerly in Use in England.—Sixteen farthings were one *groat*; six shillings and eightpence a *noble*; ten shillings an

angel; thirteen shillings and fourpence a *mark;* and twenty-one shillings a guinea. The value of money is the same in England and Scotland; but in Ireland thirteen pence go to a shilling, sixty-five pence to a crown, and twenty-two shillings and ninepence to a guinea. In France a *sou* is equal to our halfpenny; twenty *sous* are called a *livre*, equal to tenpence English; ten *livres* go to a *ducat*, or nine shillings and threepence English. A *florin* is twelvepence-halfpenny, and a *louis d'or* equal to one English pound. In Germany a *marc* is the same as eighteenpence English, and a *rix-dollar* equal to four shillings and sixpence. In Holland a *rix-dollar* is equal to four shillings and fourpence-halfpenny, and in Saxony to three and sixpence. The same at Hanover, Brandenburg and Pomerania, Bohemia, Silesia, Hungary, Austria and Swabia, Vienna, Frankfort, Nuremberg, Cracow, Warsaw, and in Prussia; and in Denmark, Norway, and Switzerland, the value is the same as in Germany. In Denmark and Norway four *marcs* are called a crown, equal to our three shillings, six *marcs* going to a rix-dollar, or Rigsbank dollar. In Italy a *pistole* is equal to fourteen shillings and fourpence English, and in Savoy and Sardinia to sixteen shillings and threepence. In Bengal twelve *pices* make an *anna*, and sixteen annas a *rupee*, equal to two shillings English; thus two *rupees* eight *annas* are equal to one crown. In Jamaica and Barbadoes thirty shillings go to a guinea. In Madras a gold rupee is equal to one pound fifteen shillings of our money.

78. **Italy.**—The principal cities of Italy are distinguished as follows:—Rome the holy; Venice the rich; Naples the beautiful; Florence the fair; Genoa the superb; Padua the learned; Bologna the fertile; Milan the large; and Ravenna the ancient.

79. **The Sea-shore.**—It must add much to the enjoyment of a visit to the sea-side thoroughly to understand the pebbles and stones we meet with on every beach, some of which are so beautiful when cut and polished, and yet appear only like common stones to an unpractised eye. Then how singular are the sea-anemones or *living flowers!* so called from their appearance seeming to partake of the vegetable nature. The sea, indeed, contains vast riches of various kinds. How numberless are the fish, from the whale (the largest of which is the Greenland whale) down to the tiny little fish that forms the meal of the kingfisher! The most valuable part of the whale is the fat, from which an oil is extracted, a single capture sometimes yielding 4,000 gallons. Then there are the

crabs and lobsters, which change their shell, and the little shrimps and prawns. How wonderful are the oysters? one of which will sometimes contain in its shell nearly a hundred pearls. Every shell we see has contained a fish or creature of some kind. The scallop shell was used in olden times as a pilgrim's badge. The most common shells of our shores are the limpets. We may often find some very pretty shells in England, but how beautiful are those which are found in foreign lands! In India and China the thin layers of some shells are used for windows instead of glass. In India the shell of the nautilus is used for a drinking vessel, ornamented with painted pictures. Knives and spoons are made from other kinds. Then, again, in India the cowry is used for money. In India, China, and parts of Africa, shells are burnt for lime, where stone cannot be procured for that purpose. In Sicily *gloves* are manufactured from the soft filaments of a particular kind of shell. What various sea-weeds we find! some so delicately fine! One species is eaten by the Highlanders and Icelanders. Seaweeds grow in masses on rocks in the sea. There are nearly four hundred British species alone. The *woody codium* is found in the Pacific and Atlantic Oceans. The red seaweeds are described as the most beautiful of the class *Algæ*. The fronds of the feathery Pilota resemble feathers. The hair-flag is often to be met with. Many beautiful birds are to be found only by the sea. How often on a stormy day at the sea-side we see a flight of white gulls passing over the sea, with perhaps just a ray of sunlight beaming on the sails of a distant ship! The difference of one beach from another is remarkable; whilst one is all sand, another seems chiefly composed of stones.

80. Ships are very ancient; formerly the vessels of war were called *galleys*. The war ships were very clumsy in the time of Richard II. In 1253 the fleet only numbered about 1,000 ships. The first English admiral (Roger de Leyburn) was appointed in 1297. The first really good ship of the British navy was built in 1488, at a cost of £14,000. It was destroyed by fire sixty-eight years after. *Henri Grace à Dieu* was built in 1515, at Erith. A picture of this ship may be seen in Greenwich Hospital. In 1552 the name was changed to *Edward*. The next *large* ship was called the *Sovereign of the Seas*. The *Great Harry* was the name of the first ship that was built with portholes. The bomb ship was invented by Raneau, a Frenchman, in 1680.

81. Map.—First map of England drawn by George Lilly in 1520.

82. Pompey's Pillar.—Pompey's pillar is composed of red granite. The base is a synose block of marble, sixty feet in circumference. The pillar is 114 feet high.

83. Order of the Bath.—The Order of the Bath was instituted in 1399, at the coronation of Henry IV. of England.

84. Inundations.—The principal inundations have been those of the Thames, year 9; the Severn, in 80; the Humber, in 95; the Tweed, in 218; the Medway, in 861; the Dee, in 885; the Trent, in 214; and the Liffey, in 1787.

85. The Oldest Bridge in England is stated to be the Gothic triangular bridge at Crowland, in Lincolnshire, said to have been built in 860; it may, however, be doubted whether the stone bridge at Bow, near Stratford, erected as early as 1087, was not the first, as the *present* structure at Crowland is credibly supposed not to have been built until the reign of Edward I. The statue at the foot of Crowland Bridge is supposed to have been placed there in commemoration of the original founder, as a bridge appears to have existed on the present site from a very remote period.

CROWLAND BRIDGE.

86. The Rock Bridge of Virginia is 213 feet above the Cedar Creek river, 60 feet wide, 80 feet long, and the mass at the summit of the arch 40 feet thick, upon which grow several large trees. Few dare to peep over the parapet. Washington, when a youth, climbed 30 ft. high under the arch, and cut his initials—G. W.

87. CINQUE PORTS.—Dover, Hythe, Hastings, Romney, Sandwich, Winchelsea, Rye, and Seaford. The Cinque Ports had formerly great privileges on condition of fitting out ships for the defence of the coast.

88. FIRST STONE CHURCH erected in England was at Lincoln.

89. Gas introduced into London for lighting shops and streets in 1814.

90. Knives made in England, in 1563, by Matthews, on Fleet Bridge, London.

91. May-day Customs.—A curious custom of the "May-doll" prevails in a village in South Devon. The doll is dressed up, placed on a chair, and carried along in a complete arbour of flowers. It is said to be of great antiquity. At Helston, Cornwall, a general holiday is held on the 8th of May, and a festival called the "Furry." The former rude custom was to call at every school on their way, and demand a holiday, while every man they found at work was fined, or dragged through a pond. No one was allowed to work during the "Furry." Horns were blowing, drums beating, men shouting. After the humbler classes came the gentry, followed by their servants, all gaily dressed and decorated with flowers. The custom of May-day sports seems to have been very ancient, practised by the heathens in honour of the goddess Flora. The present festival, called the Flora day, is kept as a general holiday, and the chief attraction is marching to dance music of ladies and gentlemen of the town. Fines have not been exacted for many years. In the ninth year of Henry VIII. a great disturbance took place on May-day, when several persons were killed. It has always, as far as can be traced, been usual to elect a "Queen of the May." It was a common custom for the milkmaids to decorate their milkpails with silver cups and salvers (borrowed for the purpose), and gay-coloured ribbons and flowers on May-day, as well as decorating cows with bows, and roses, and green leaves.

92. Poets.—The most famous Grecian and Roman poets were as follow:—Grecian: Homer, Hesiod, Alcæus, Sappho, Sophocles, Anacreon, Musæus, Pindar, Æschylus, Euripides, Simonides, and Menander. The Roman: Virgil, Horace, Ovid, Lucan, Tibullus, Persius, Juvenal, and Martial.

93. Painters.—The most celebrated painters of the Italian school were Raphael, Michael Angelo, Leonardo da Vinci, Claude of Lorraine, Salvator Rosa, Correggio, Albani, Giotto, Caracci, Giorgiona, Domenichino, Guido, Julio Romano, Guercino, Mazzuoli, Carlo Maratti, Titian, Tintoret, Venetiano, Paul Veronese, and Zelotti.

94. Insects.—There have been collected in Europe 20,000 species of insects preying on wheat.

95. Bellows were invented 554 years B.C.

96. Heraldry.—Heraldry had its rise in 1100.

97. Epsom Mineral Spring discovered, 1630.

98. Strand.—The Strand, London, was first built upon in 1353.

99. ALMANACKS.—Almanacks were first printed at Buda in 1470, and in Constantinople in 1806.

100. ARCHERY.—Archery was introduced into England in 440.

101. PENSIONS.—Pensions were first granted in the year 1512, when the sum of twenty pounds was given to a lady of the Court for services rendered.

102. BISHOPRICS.—Bishoprics were founded in Germany by Charlemagne, in 800.

103. COALS first brought to London in 1357. Great Britain produces annually about 31,500,000 tons of coal.

104. TOBACCO brought to England from Virginia in 1583.

105. THE ATLANTIC CABLE was laid July 30, 1866.

106. ROSES planted in England in 1522.

107. FOUNDLING HOSPITAL opened in 1756.

108. ISINGLASS.—Isinglass is made from the sounds and air-bladders of the sturgeons found in the river Volga.

109. INDIA-RUBBER.—India-rubber is the juice of a tree which grows in South America.

110. PINS were first used by Catherine Howard, wife of Henry VIII. (in England). They were brought from France in 1543.

MANUFACTURES.

111. **The Cotton** manufacture is carried on in all the following towns in Cheshire and Lancaster:—Manchester, Blackburn, Bolton, Preston, Wigan, Bury, Oldham, Chorley, Rochdale, Stockport, and Ashton-under-Line. The cotton is pressed between rollers, and comes out soft and fine. When gummed at the back it is called wadding. It is spun finer and finer, till it becomes fit for weaving. More than 30,000 people are employed in the cotton mills alone. The quantity of raw cotton imported yearly is over 1,000,000,000 lbs. The principal seat of the cotton manufacture in Scotland is Glasgow, and of the woollen, Hawick, Paisley, Kilmarnock, Stirling, and Aberdeen.

112. **The Woollen** manufacture is the oldest one of any great importance in the kingdom. It is carried on in Yorkshire, Wiltshire, Gloucestershire, and Somersetshire. Broadcloth is made at Leeds, Bradford, Huddersfield, and Halifax, in Yorkshire; Trowbridge and Bradford, in Wiltshire; Frome, in Somersetshire; and Stroud, in Gloucestershire. The principal shoddy mills are at Dewsbury. SHODDY is the name given to cloth respun from *old rags*.

113. **Flannels** are made in Wales, at Welshpool and Dolgelly; and in England at Rochdale and Halifax.

114. **Blankets** are made at Witney, in Oxfordshire. They were first made at Bristol by a Thomas Blanket, in 1340. Worsted has its name from Worsted, in Norfolk, where it was formerly much spun, but now it is chiefly made at Bradford, in Yorkshire.

115. **Bombazine** and **Poplins**, made of silk and worsted, are manufactured at Norwich.

116. **The Chief Carpet** manufactories are Axminster, in Devonshire, and Kidderminster, in Worcestershire. The word carpet is derived from "*carpetta*." Persia and Turkey are famous for their carpets. The Turkey carpets are stronger than any other kind. They are made near Smyrna. Brussels carpets are made at Kidderminster, and Wilton carpets (or pile) are made at Wilton. The art was brought to London from France, in 1750. Carpets are also made at Glasgow and Kilmarnock, in Scotland.

117. **Thread.**—The principal mills for spinning thread are at Darlington, and villages near Darlington, in Durham.

118. **Linseys** are made at Batley, in Yorkshire.

119. **Towels, Sheetings,** and **Damask Tablecloths** are made at Barnsley. 120. **Linen** made in England in 1253.

121. All kinds of HARDWARE and CUTLERY are made at Sheffield, Birmingham, Wolverhampton, Walsall, Dudley, and Bilston.

122. NAILS are made at Dudley.

123. TIMEPIECES and WATCHES at Clerkenwell and Coventry.

124. JEWELLERY in London and at Birmingham.

125. SILK-WEAVING at Spitalfields and Bethnal Green, Manchester, Coventry, and Macclesfield.

126. ROPES, CABLES, and SHIPS are made, and many extensive manufactures carried on, in London.

127. SHIPS are also made at Liverpool, Hull, Newcastle, and Yarmouth.

128. SOAP and CANDLES made in London.

129. TANNING is carried on at Bermondsey, in Southwark.

130. BOOTS and SHOES are made at Northampton, Wellingborough, Stafford, Kettering.

131. EARTHENWARE in Staffordshire.

132. CAMBRIC takes its name from Cambray, in France, where it is manufactured.

133. SHAWLS are made at Paisley, in Scotland.

134. PINS made at Gloucester.

135. **Parchment** is made at Worcester, from the skins of animals.

136. **Baizes** manufactured at a town near Bolton.

137. **Gloves** at Woodstock, Worcester, Hereford, and Hexham, and at Limerick in Ireland. They are made from the skins of animals, the kid and doe especially. Formerly they were made by women, but now chiefly by machinery.

138. **Very Coarse Cloth** is made at Kendal, in Westmoreland.

139. **Calico Printing** was invented at Blackburn.

140. **Muslins and Quilts** are made at Bolton.

141. **Fine China** is made in Staffordshire; and here are the famous works for the MOSAIC PAVEMENT.

142. **Hooks and Eyes** are made at Birmingham. Five thousand to six thousand can be made in an hour.

143. **Buttons** are also made here. More than two thousand people are employed in making pearl buttons alone. They are cut out of the oyster shell. The holes are then drilled in them, and they are polished with soap and rotten-stone.

144. **Glass** is made at South Shields, in Durham, and here also are large soda works. Glass is made by melting flint, soda, and sand, in an intense heat. The Emperor Nero is said to have given £50,000 for two small cups of transparent glass. Drinking-glasses were first made in England in Queen Mary's reign. It was first used for windows by the Italians. Plate-glass was first cast in England in the time of Charles the First. Tax levied 1746.

145. **Lace** is made at Nottingham, and also in Devonshire. In the last-named county the beautiful kind called Honiton is made.

146. **Stockings** are made at Nottingham. STRAW MANUFACTURE in Bedfordshire.

147. **Tobacco-pipes** and BRICKS are made at Broseley, in Shropshire.

148. **Kerseymeres** and CARRIAGE LININGS are manufactured at Frome, Somersetshire.

149. **Fuller's-earth**, much used in the woollen manufacture, comes from Reigate, in Surrey.

150. **The Manufactures of France** are silk, woollen, cotton, linen, hardware, and jewellery. SILK is made at Paris, Lyons, Nismes, Avignon, and Tours. The COTTON manufacture is carried on at Rouen, St. Quentin, Paris, Troyes, Lille, Tarare, and Cholet. THE IMPORTS OF FRANCE are raw cotton and silk, metals, sugar, wool, wood, indigo, and coal. Jewellery, watches and clocks, bronze ornaments, &c., are made at Paris.

151. **Needles.**—The first record of needle-making in England is in the year 1545, in the reign of Henry VIII. It is supposed it was

introduced by a Moor from Spain. Needles were sold in Cheapside and other parts of London in the reign of Queen Mary, and were then made by a Spanish negro. With his death the art was lost, but was revived by a German in 1566. The crest of the needle-makers is the head of a negro. The German and Hungarian steels make the best needles. Many thousands of men, women, and children are employed in making them. The village of Hathersage, in Derbyshire is famous for needle-making. Redditch, near Bromsgrove, Worcestershire, is famous for its large manufactory of needles. The steel for needles is passed through a coal fire, and hammered until reduced to a fine wire, which is cut into pieces of the proper length; each of these is flattened at one end where the eye is pierced. The point is filed, and they are again made red-hot in a charcoal fire, and then thrown into a basin of cold water to harden them. This done, they are polished with emery powder and oil, then washed with hot water and soap, and dried in hot bran, and once again smoothed with an emery stone. About 70,000,000 of needles are made every week at Redditch.

152. Silk first brought from India A.D. 274.

153. **The First Silk Mill** erected in England was at Derby, by three brothers of the name of Lombe. The youngest brother went to Italy, to try and discover how the silks were made there; but it was long before he could do so, as whenever he went into the manufactory the wheels were working so fast; at last, it is to be lamented, the brothers resorted to deceit and falsehood by bribing a priest, and telling the Italians John Lombe was a poor lad in want of employment, and he was engaged to work at the mill. He slept there, and, providing himself with matches and a dark lantern, he took drawings during the night of every part of the machinery. He made a hole under his bed, and kept the drawings there all day, and every night, when all was still, he worked hard. At last his work was finished, and he escaped, first, however, sending his drawings home to his brothers. Suspicion was excited, and an Italian vessel was sent in pursuit, but all parts of the machinery were now put together by the three brothers. The priest accompanied John Lombe to England. The latter died at the age of twenty-nine, from the effects of slow poison administered by a person employed by the Italians. The mill was erected in 1725. There was a time when silk was of the same value as gold, weight for weight. Silk mantles were first worn at a ball at Kenilworth Castle, in 1286. In the reign of

Elizabeth the silk manufacture in England progressed rapidly. Silk stockings were first worn by Catherine de Medicis. Henrietta, queen of Charles I., introduced the fashion of wearing black silk stockings into England.

154. Oil-silk is made in Surrey.

155. Paper is manufactured from linen rags in England, from the bark of a tree in Japan, and from various materials in China. It may also be made of parsnips, turnips, hay, nettles, asbestos, or anything that is fibrous. The Egyptian paper, which was principally used among the ancients, was made of a rush called papyrus, whence the word paper is derived. It grew on the banks of the Nile. The first paper-mill in England was erected at Dartford, in Kent, in the year 1588; but only the very coarse brown paper was made in this country till 1690, when white writing paper and printing paper were attempted. In Japan the young shoot of the paper tree are boiled in water until the bark separates from the wood. The bark is then cooled and cleaned; that from the youngest shoots is made into common paper, that of one year's growth into the best and whitest paper, and above a year's growth into the coarsest. After the bark is cleaned it is again boiled till it becomes like a collection of fibres. It is then washed and passed through a sieve. It is afterwards beaten till quite soft, and then put into a tub with a glutinous extract from rice, and a root called oreni. These substances are stirred till they form a liquor of an equal consistency. After being made into sheets, the paper is left in the open air until perfectly dry. The Japanese paper is extremely strong. The paper produced from the cotton is white, strong, and of a fine grain. The ancients wrote on the white inner coat found in many trees between the bark and the wood, particularly the maple, the plane tree, the elm, the beech, the mulberry, and the linden tree. The different sorts of paper made in China vary according to the materials of which they are composed; each province has its peculiar paper. In making paper of linen rags, in the first place the rags are sorted into different lots, according to their quality,—superfine, fine, middle, and coarse. Women are employed to pick out every kind of sewing or knots of thread. Coloured rags are bleached white for *common* writing paper; the superfine is always made of white linen. The rags are torn to pieces in a mill by a kind of long, sharp teeth, and reduced to a pulp, which is put into a copper of warm water, into which moulds of the size of a sheet of paper are dipped.

Each sheet of paper is placed between two pieces of woollen cloth and pressed, after which it is dried, and then sized. Much that was formerly done by hand is now performed by machinery. There are many kinds of paper besides those we have mentioned; as rice paper, tissue, silver, gilt, paper for engraving, flock, and coloured for papering rooms, whity-brown, brown of various degrees of thickness, marble papers used for bookbinding, and a thin kind of which bank notes are made.

156. Papier-maché.—Papier-maché is made of paper boiled in water, and beaten in a mortar until it is reduced to a kind of paste. It is then boiled again with gum-arabic or size, and can afterwards be formed into tea-trays, dressing-cases, portfolios, inkstands, and many other useful and ornamental articles. When dry it is done over with size and lamp-black, and afterwards varnished. It is sometimes painted with flowers or landscapes.

157. DRESDEN CHINA invented in the year 1702.

158. CARVING.—Carving in marble was invented 772 B.C.

159. PAPER made of cotton rags in 1009.

160. GUNPOWDER made by a monk, at Cologne, in the year 1330.

161. PLASTER OF PARIS.—The practice of taking likenesses in plaster of Paris was discovered by Andrew Veracchio in 1470.

162. WOODCUTS invented in 1460.

163. ROOMS first papered in Spain and Holland in 1555.

164. CARRIAGES.—Carriages were introduced into Venice in 1515, and into England in 1580.

165. LITHOGRAPHIC PRINTING brought into England 1801.

166. FOUNDRY.—The first common foundry was established in England in the first year of Queen Mary's reign.

INTERESTING FACTS.

167. Intense Heat.—In 1293 and 1294, also in 1303 and 1304, the heat was so great as to cause the Rhine and Danube to dry up. In the years 1473 and 1474 the whole earth seemed on fire. In some parts persons might wade across the Danube.

168. Intense Cold.—In 401 the Black Sea was entirely frozen over. In 545 the cold was so intense in winter that the birds allowed themselves to be caught by the hand. In 1468 the winter was so severe in Flanders, that the wine distributed to the soldiers was cut in pieces with hatchets. In 1716 booths were erected on the Thames, and fairs held.

169. Drought.—In 1556, in England, the drought was so great that wheat rose from eight to fifty-three shillings a quarter.

DISTINGUISHED PERSONS.

170. Sir Isaac Newton.—Isaac Newton was born at Woolsthorpe, in Lincolnshire, on December 25th, 1643. He was knighted in 1705; and died March 20th, 1727, aged eighty-three. To him we owe the discovery of the prismatic colours, and much interesting information as to the revolution of the earth round the sun. Newton was a distinguished mathematician, and was regarded as one of the greatest geniuses that have appeared in the world; and his correspondence was general with all the learned men of his time in Europe.

SIR ISAAC NEWTON.

171. Edward the Martyr was crowned in 975, aged 14 years. He was the first king to whom the coronation oath was administered.

172. Giotto.—Ambro Giotto was the son of a simple husbandman. He was born at Vespignano, about fourteen miles from Florence, 1276. He became a famous artist from a very early age. He died in 1336, aged sixty years.

173. Michael Angelo was born at Caprese Castle, in Tuscany, March 6th, 1474. He died at the advanced age of 90 years.

174. Thomas Parr.—"Old Parr" was born near Shrewsbury, in 1483. He lived to the age of one hundred and fifty-two years, and was buried in Westminster Abbey. He was born in the reign of Edward IV., and died in that of Charles I.

175. Raphael.—Raphael d'Urbino Sangio, another famous artist, was born at Urbino, March 28, 1483, and died April 7th, 1520, aged thirty-seven.

176. Luther.—Martin Luther was born at Eisleben, in Lower Saxony, November 10, 1483. Died February 17, 1564, aged 80.

177. Cranmer.—Thomas Cranmer, the first Protestant Archbishop of Canterbury, was born on July 2, 1489. He suffered death by burning on the 21st of March, 1555.

178. Correggio.—Correggio, named after his birthplace, Correggio, a town near Modena, in Italy, a most celebrated painter, was born in 1494, and died in 1534, at the age of forty; his death having been caused by a violent cold, brought on by drinking cold water while over-heated and fatigued, occasioned by his having

been paid for a picture, just executed, its worth of between twelve and thirteen pounds, in copper money, and having to carry this great weight twelve miles in the heat of summer.

179. **John Knox.**—The celebrated reformer, John Knox, was born at Haddington, in 1505. He died in 1572, aged sixty-seven.

180. **Sir Francis Bacon.**—Francis Bacon was born on 22nd of January, 1560; was knighted in 1603; died in 1626, aged 66.

181. **Sir Thomas Gresham.**—Thomas Gresham was born in 1519. He was descended from an ancient Norfolk family. He erected the Royal Exchange in 1567, entirely at his own expense. Queen Elizabeth visited the Exchange in January, 1571, and gave it the title of *Royal*, at the same time conferring the honour of knighthood on the founder. The building was burnt down in the great fire of London, 1666, and was rebuilt in 1670, Sir Christopher Wren being the architect. Gresham College was founded in 1681. Sir Thomas died in 1579, aged 60.

182. **Sir Philip Sydney.**—Philip Sydney was a native of Penshurst, in Kent. He was killed in the battle of Zutphen, in 1586, in the thirty-second year of his age. An oak is shown at Penshurst said to have been planted on the day of his birth.

183. **Sir Francis Drake.**—The first English navigator who sailed round the world was Sir Francis Drake. He set out in 1577.

184. **Galileo.**—Galileo was born at Pisa on the 15th of March, 1564. He is considered to be the inventor of the telescope. He became blind before his death, which took place January 8th, 1642.

185. **Shakspere.**—William Shakspere was born at Stratford-upon-Avon, Warwickshire, April, 1564; died in 1616, aged 52.

186. **Herbert.**—George Herbert, the poet, was born in the Castle of Montgomery, April 3, 1593; died 1635, aged 42.

187. **Guy Fawkes.**—Guy Fawkes, the principal conspirator in the plot to blow up the Houses of Parliament, on November 5th, 1605, in the reign of James I., was executed on Jan. 31, 1606.

188. **Milton.**—John Milton the poet was born in 1608. He became quite blind before his death, which took place in 1674, when he was sixty-six years of age.

189. **Pascal.**—Blaise Pascal was born in 1623, at Clermont, in Auvergne. He died August 19th, 1662.

190. **John Kyrle.**—John Kyrle, the Man of Ross, was born at White House, in Gloucestershire, in 1643; died in 1734, aged 90.

191. **Dr. Watts.**—Dr. Isaac Watts was born in 1673, and died in 1748, at the age of 75.

192. Handel.—George Frederick Handel was born at Halle, Upper Saxony, in 1685. He died April 14th, 1759, aged 74. His remains were interred in Westminster Abbey.

193. Hogarth.—William Hogarth was born in London, November 10, 1697. At an early age he showed a great fondness for drawing. He died suddenly in London, in 1764, aged 67.

194. Franklin.—Benjamin Franklin was born at Boston, in January, 1706. He discovered the power of electricity in 1752. He died in Philadelphia, April 17, 1790.

195. Hume.—David Hume, the philosopher and historian, was born in the year 1711; died 25th of August, 1776, aged 65.

196. White.—Gilbert White (author of "Natural History of Selborne") was born at Selborne on July 18th, 1720. He died June 26th, 1793, aged 72.

197. Howard.—Howard the philanthropist was born in 1725, and died 1790, aged 65.

198. James Cook.—Captain James Cook, the celebrated navigator, was the son of James Cook, an humble farm servant in a little village in Northumberland. Captain Cook was a native of Marton, in Yorkshire, and was born October 27, 1728. He was killed by some savage Indians at Owhyhee, one of the Sandwich Islands, in 1779, aged 51.

199. James Watt.—James Watt was born at Greenock, in Scotland, in 1736. At a very early age he showed great skill in mechanics. At the age of nineteen he was appointed mathematical instrument maker to the University of Glasgow. He died at Heathfield, in Staffordshire, at the age of 84.

200. Chatterton.—Thomas Chatterton was born November 20, 1752. He died at the early age of eighteen, from the effect of arsenic taken in a fit of despair.

201. Mozart.—John Chrysostom Wolfgang Theophilus Amadeus Mozart was born on January 27th, 1756, at Salzburg. At the age of eight years he was complete master of the organ, harpsichord, and violin. On the 4th of August, 1782, he married Constance Weber. Mozart's "Requiem" was composed shortly before his death, which took place December the 5th, 1791.

202. Scott.—Walter Scott was a native of Edinburgh. He was born on the 15th of August, 1771. He was created a baronet on March 30, 1821. He died on September 21, 1832.

203. Cowper.—William Cowper was born in 1731, and died in 1800, aged 69.

204. **Mungo Park.**—The great traveller, Mungo Park, was born at Foulshiels, a farm on the banks of the Yarrow. Foulshiels is near Selkirk, in Scotland.

205. **Grace Darling.**—The tomb of Grace Darling, the famous heroine, who died in a consumption at Longstone lighthouse, is situated in Bamborough churchyard, Northumberland.

CAMBRIDGE AND OXFORD COLLEGES.

CAMBRIDGE.

206. **Cambridge University** was founded by Sigebeth, king of East Anglia, in 631, and contains seventeen colleges.

207. **St. Peter's College** was founded by Hugh de Balsham, 1257. It is the oldest college in the university.

208. **St. John's College** was built on the site of a dissolved hospital which was founded, about 1134, by Henry Frost. It was converted into a college in 1281. The old house was dissolved, and a new college founded April 9th, 1511, by the executors, under the will of Margaret, mother of Henry VII., and founder of Christ's College. A beautiful new chapel was opened in May, 1869.

209. **Trinity Hall,** originally a hostel, was purchased by Richard Crowder, Prior of Ely, as a lodging-house for the monks of Ely, in the reign of Edward III. It was enlarged by Richard Ling, Chancellor of the University, and in 1350 transferred to William Bateman, Bishop of Norwich, who erected it into a college.

210. **Clare.**—The first foundation of Clare College dates 1326, when Richard Baden, or Badow, erected a small college; which, however, was burnt down in 1342, just sixteen years after its first erection. It was entirely rebuilt between the years 1344—7 by Lady Elizabeth de Burgh, sister and co-heir of Gilbert, earl of Clare. The whole college was again rebuilt by subscription, with Ketton stone, in 1638. Clare College chapel was not erected till 1763.

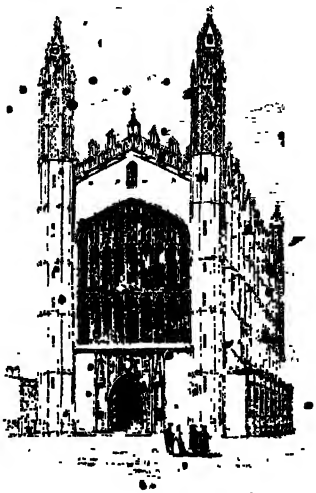
211. **Pembroke.**—This college was founded, in 1443, by Mary de St. Paul, Countess of Pembroke. Her husband was killed in a tilting-match on the day of their marriage. The chapel was erected by Bishop Wren, uncle of Sir Christopher Wren, about 1664-5.

212. **Trinity College,** which is a magnificent establishment occupying the site of several hostels, as well as two ancient societies, was founded in 1546 by Henry VIII.

213. **Corpus Christi College** was commenced in 1351 by the Guild or Society of the "Body of Christ," who, being soon joined

by the Guild of the "Blessed Virgin Mary," rapidly advanced with their work, through the help and interest of Henry Plantagenet, Duke of Lancaster, whom the brethren of the two societies chose as their first alderman.

214. **Gonville and Caius**, known as Caius College, was commenced by Dr. Edmund Gonville in 1347. He shortly died. In the year 1558 Dr. John Caius, physician to Queen Mary, procured a confirmation of its privileges, and considerably increased the endowments.



KING'S COLLEGE CHAPEL.

215. **King's College**, founded by Henry VI. in 1441. The chapel is very beautiful.

216. **Queen's College** was the joint foundation, of Margaret of Anjou, queen of Henry VI., (1446) and Elizabeth Woodville, queen of Edward IV. (1465).

217. **Catherine College** was founded in 1475, by Robert Woodlark, Chancellor of the University.

218. **Jesus College**, founded by John Alcock, Bishop of Ely, 1496.

219. **Christ's College** was originally a hostel, called "God's House." The name was changed, and Christ's College founded in 1505, by Margaret, Countess of Richmond and Derby, mother of Henry VII. A large mulberry tree in the Fellows' garden was planted by Milton, when a student here.

220. **Magdalen.** This college was formerly a priory, which was built in 1092, by Picot, a Norman. College founded 1519, by Edward Stafford, Duke of Buckingham, who was soon after condemned to the scaffold. The college was endowed in 1542, by Thomas, Lord Audley.

221. **Emmanuel College** was founded by Sir Walter Mildmay in 1584, on the site of a Dominican friary, which was built about 1280. The chapel was commenced in 1668, completed in 1677.

222. **Sidney Sussex College** was founded by Frances Sidney, Countess of Sussex. The first stone was laid May 20th, 1596.

223. **Downing College** was erected in 1800, in pursuance of the will of Sir George Downing, Bart.

OXFORD.

224. **Oxford University** supposed to have been founded by King Alfred, contains twenty colleges and five halls.

225. **University College**, supposed to have been founded by King Alfred in 872, was restored by William of Durham, who died in 1249.

226. **Merton College.**—Founded by Walter de Merton, Bishop of Rochester. The foundation charter dates January 7, 1264.

227. **Balliol College.**—Founded by John de Balliol, in 1282.

228. **Exeter College.**—Founded in 1315 by Walter de Stapledon, Bishop of Exeter.

229. **Oriel College** was founded between the years 1324–30, by Adam de Brom.

230. **Queen's College** owes its foundation to Robert de Eglesfeld, about the year 1340.

231. **New College** was founded in 1380, by William of Wykeham, Bishop of Winchester.

232. **Lincoln College** in 1427, by Richard Flemhyng.

233. **All Souls'** just ten years later, by Henry Chichele, Archbishop of Canterbury.

234. **Magdalen College** by William of Waynflete, Bishop of Winchester. The foundation dates from 1473.

235. **Brazenose College** was founded in 1509, by William Smyth, Bishop of Lincoln, and Sir Richard Sutton.

236. **Corpus Christi** dates about 1516, the founder being Richard Fox, Bishop of Winchester.

237. **Christ Church College** was founded by Cardinal Wolsey in 1524.

238. **Trinity College** was founded in 1554 by Sir Thomas Pope.

239. **St. John's**, founded one year later by Sir Thomas White.

240. **Jesus College**, founded by Queen Elizabeth about 1571.

241. **Pembroke College**, foundation took place in the early part of the 17th century, the founders being Thomas Tesdale and Richard Whitwick.

242. **Wadham College** was founded by Nicholas Wadham, Esq., in 1610.

243. **Worcester College**, originally founded by John Giffard in 1283. At the dissolution it was purchased by Sir Thomas White, who conveyed it to St. John's College. The present institution dates from the year 1714.

244. **Keble College** was built by public subscription, in com-

memoration of the Rev. John Keble, vicar of Hursley and author of the "Christian Year." It was opened for the admission of students in the summer of 1870.

245. **The Five Halls** are ST. MARY'S, ST. MARY MAGDALEN, NEW INN, ST. ALBAN'S, and ST. EDMUND'S. These Halls differ from the Colleges, inasmuch as they are not corporate bodies, and have no endowments for Fellows; and all property which they own is held in trust for them by the University.

246. **St. Mary Hall** was the parsonage house of the rectors of St. Mary's Church till 1325, when Edward II. gave it, with the church and all the appurtenances, to Oriel College. It was converted by that society into a separate educational establishment in 1333, and subsequently became an independent academical hall.

247. **Magdalen Hall** was originally a school, with refectory and chambers, built by William of Waynflete, for students previous to admission into his college. It obtained the appellation of Magdalene Hall in 1487. In 1602 it became an independent hall. The site of the hall was transferred by Act of Parliament from its original place, adjoining Magdalen College, to the present spot, where formally stood Hart Hall, or Hertford College, which became extinct in 1805. The greater portion of the existing structure was built in 1820.

248. **New Inn Hall** was formerly known as Trillick's Inn, from its having belonged to John Trillick, Bishop of Hereford, who died in 1360. It afterwards came into the possession of William of Wykeham, who gave it to the Warden and Fellows of New College.

249. **St. Alban Hall** took its name from Robert de St. Alban, a citizen of Oxford in 1230, who gave it to the nuns of Littlemore. On the dissolution of monasteries Henry VIII. gave it to his physician, a Fellow of Merton College. After passing through several hands it was finally transferred to the Warden and Fellows of Merton College, who established it as an academical hall.

250. **St. Edmund Hall** was purchased in 1269 by the canons of Osney, and soon afterwards applied by them to educational purposes. At the dissolution it came into the possession of the Provost of Queen's College, to which society it is still attached.

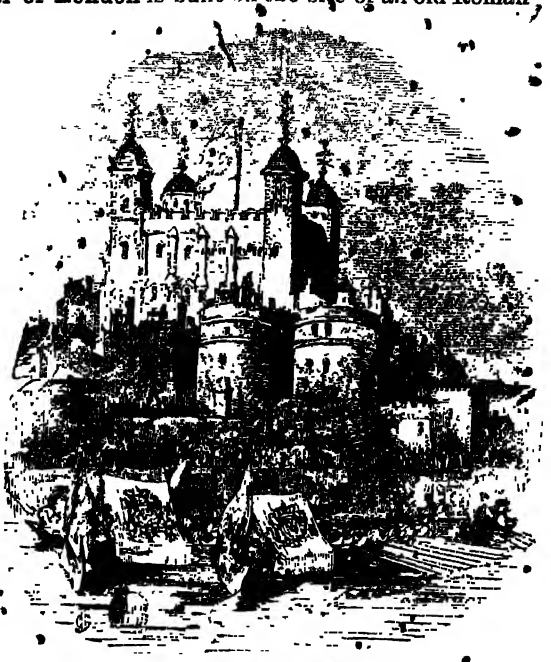
251. **Universities.** SCOTLAND has four universities, St. Andrew's, founded in 1413; Glasgow, founded in 1450; Aberdeen, founded in 1494; and Edinburgh, founded in 1582. The three first were founded by papal authority, and Edinburgh after the Reformation.

CATHEDRALS, ABBEYS, PRIORIES, CASTLES.

252. **St. Paul's Cathedral**, London, was founded in the early part of the seventh century, but no account of the first foundation has been preserved. It is said the site of the cathedral was once occupied by a temple dedicated to Diana, but Sir Christopher Wren was of opinion that a Christian church had stood upon the spot at a very early period. Bede ascribes the foundation of the original St. Paul's to Ethelbert, king of Kent, in 610. In 1086 the building was destroyed by fire; and again in 1135 it was also much injured by fire, and was afterwards repaired and paved with marble at fivepence a foot. The spire and old cross were repaired in 1314. The church was struck by lightning in 1444; the repairs were not completed till 1462, when a man was, unhappily, killed in raising the weathercock (an eagle, with expanded wings, made of copper gilt, 4 feet in length, and 3½ feet in breadth). The building was again set on fire in 1561, and was repaired by order of queen Elizabeth. After the great fire of London, 1666, the edifice was entirely remodelled by Sir Christopher Wren. The ascent to the whispering gallery is by a circular staircase; the length of the minute hand of the clock is 8 feet, and the weight 75 lbs. The monuments are numerous and interesting. It has been the burial-place of many Saxon kings and bishops, and of many celebrated personages, amongst whom may be mentioned, Sir Francis Walsingham, Sir Philip Sidney, Sir Nicholas Bacon, Sir Christopher Hatton, Sir John Beauchamp, Margaret Beauchamp, Sir Anthony Vandyke, lord Latimer, and William Lilly the grammarian.

253. **Westminster Abbey**, London, was founded about the same time as St. Paul's Cathedral; and was rebuilt by Edward the Confessor. Many of our English sovereigns have been crowned within its walls, and this abbey is the well-known burial-place of many illustrious personages. The entire edifice was nearly rebuilt by Henry III., and Henry VII. greatly enlarged some parts, and erected the chapel of Edward the Confessor, which is very interesting, and is called the World's Wonder. The Poets' Corner contains monuments to Milton, Shakspere, Gray, Thomson, Goldsmith, Cowley, Dryden, Rowe, Johnson, and Campbell, with many others; while in the chapel of kings rest Edward the Confessor, Henry III., Edward I., Edward III., Richard II., Henry V., Queen Eleanor, Philippa and Anne of Bohemia.

254. The Tower of London is built on the site of an old Roman fort. The White tower was built by William I., 1078, and was repaired by William Rufus, 1097; who also built Westminster Hall the same year. Henry VI. was imprisoned in, and died in the tower. Edward V. and the duke of York were murdered here. It has been used as a place of imprisonment, and also, alas! for the execution of many high and celebrated persons. Amongst those who have thus suffered may be mentioned Catherine Howard, lady Jane Grey, lord Hastings, and the earl of Essex. It has held many distinguished prisoners, including the duke of Norfolk, the earl of Surrey, the earl of Strafford, the duke of Monmouth, Sir William Wallace, Guy Fawkes. The regalia in the tower includes five crowns: St. Edward's (made at the coronation of Charles II.), the crown of state, the queen's circlet of gold, the queen's crown, and the queen's rich crown. "St. Edward's" and the "Queen's crown" are coronation crowns. The daring attempt of Colonel Blood to take the crown jewels took place in the reign of Charles II.



THE TOWER OF LONDON.

255. St. James's Palace, London, was built on the site of the ancient hospital of St. James, which was demolished by Henry VIII., founder of the palace. Charles I. spent the last few days of his life here. It was the birthplace of James, son of James II.

256. Buckingham Palace, London, was erected in 1703.

257. **Marlborough House**, London, was built in Queen Anne's reign.

258. **Hampton Court Palace** was founded by Cardinal Wolsey. Edward VI. was born at Hampton Court: and here, ten days after, queen Jane Seymour breathed her last. It was the occasional residence of Philip and Mary, and queen Elizabeth held gay courts here. Charles I. retired to Hampton during the time of the plague. Elizabeth, daughter of Oliver Cromwell, was married to lord Falconberg from this royal residence, and Mrs. Claypole, her sister, died here. Hampton Court was enlarged by Henry VIII.; great part of the building was erected by William III.

NORTHUMBERLAND.

259. **Tynemouth Priory** was built of wood by Edwin, king of Northumberland, in 617; rebuilt of stone by Oswald in 634; again rebuilt by earl Mowbray 1090. King Edred was buried here.

260. **Thirlwall Castle** stands near the Picts' Wall. It is very dilapidated, but the walls were in some parts of the immense thickness of nine feet.

261. **Tynemouth Castle** was founded about 1000. It was besieged by William Rufus. Very little of it remains.

262. **Werk Castle** is likewise completely in ruins. It was built by Henry II., burnt down by John, repaired by Henry III., and strengthened by Edward I.

263. **Alnwick Abbey** was built about 1100, and was the first house of the Premonstratensians in England. A beautiful gateway still remains.

264. **Alnwick Castle** originally belonged to a Saxon baron, named William Tyson. He was slain in the battle of Hastings. It is thought the castle was founded by the Romans. It was besieged in 1093 by Malcolm, king of Scotland, burnt down in 1266, and rebuilt in the early part of the fourteenth century.

265. **Ayden Castle** is very ancient; it was founded about 559. The ruins lead us to suppose it must have been of very great size.

266. **Bamburgh Castle** stands upon a rock which rises 150 feet above the level of the sea, and was founded in 558.

267. **Berwick-upon-Tweed Castle** was once very beautiful, but is now an extensive mass of ruins.

268. **Chipchase Castle** stands in a most lovely situation, commanding a delightful view of the surrounding country. It was rebuilt in 1516, and enlarged by Cuthbert Herron, Esq., in 1621.

269. **Featherstonehaugh Castle** was held by Thomas de Featherstonehaugh for the yearly payment of 6s. 8d., from 1216 to 1300. The surrounding country is very picturesque.

270. **Heton Castle** is in ruins. It was besieged by the Scots in 1513, but in vain, on account of its strength.

271. **Mitford Castle** was only a small villa at the time of the Conquest. The castle was burnt down in 1215. In 1216 it was besieged by Alexander, king of Scotland. The keep is still perfect.

272. **Morpeth Castle**, of which now nothing is left but the gateway tower, was burnt down in 1689. The date of foundation seems uncertain.

273. **Harbottle Castle**, built about the year 1000, belonged to Robert de Humfranville and his heirs from the time of the Conquest till 1438. In 1173 it was burnt to the ground, but was soon rebuilt, and this time so strongly that it resisted an attack by the Scots for two days. After the battle of Bannockburn it was destroyed by the Scots. Margaret, daughter of queen Margaret of Scotland, was born here in 1518.

274. **Castle of Newcastle** was built in 1080 by Robert, son of king William I. The castle and town are supposed to have taken their name from the fact of their being built on the site of an old fort. It was repaired by Henry II., and again by king John. David Bruce was imprisoned here. It was in the possession of the Company of Tailors from 1605 to 1616. The Black Gate, built in the time of Henry III. at a cost of £514, still remains.

275. **Norham Castle** was built in 1121 by bishop Flambard. It was destroyed by the Scots in 1138, and soon rebuilt by Hugh Pudsey. It was again taken by the Scots in Edward II.'s reign, and recovered in 1322.

276. **Otterburne Castle** was attacked by the Scots in 1388, the night before the battle of Otterburne. The attack was unsuccessful, on account of the strong manner in which it was built.

DURHAM.

277. **Durham Cathedral** was founded by William de Corilepho, bishop, in 1093. Malcolm, King of Scotland, laid the foundation-stone. It was completed by the next bishop, Ralf Flambard. The first addition to the original structure was the Galilee chapel, built by Hugh de Pudsey in the latter part of the twelfth century. The great tower and the chapel of the Nine Altars were built by Richard Hotoun about 1290. The situation of the cathedral is extremely fine. St. Cuthbert, one of the early prelates, was buried

at Lindisfarne; but his remains were removed to Durham in 995, after having for nine years been taken from place to place (as we are told) by the monks to avoid the attacks of the Danes. Many wonderful tales are related of the body of this prelate, and his tomb is regarded as an object of great interest.

278. **Durham Priory**, beautiful in its ruins, was founded in 1020, and added to, 1379, by John de Neville, earl of Westmoreland.

279. **Durham Castle** was founded in 1069, by king William I.

280. **Barnard Castle** was founded by Bernard Baliol about 1070. It stands in a beautiful spot in Durham.

281. **Bulmer Castle**, founded in 1135, is strongly built, and stands upon a rock.

282. **Wilton Castle.** Only of late years rebuilt, the ancient castle having been destroyed by fire.

283. **Hilton Castle.** Date of foundation unknown. The castle was in the possession of the Hilton family from the time of king Athelstan to 1749, when it passed to Sir Richard Musgrave.

YORKSHIRE.

284. **York Cathedral** was commenced building by Edwin, king of Northumbria, in 628, but he died before the completion, and Oswald, in 634, finished it. The building was twice entirely destroyed. It was partly rebuilt in the year 669, but was again destroyed by the Danes in 867. The following year, one Thomas, a canon, took upon himself the expense of rebuilding on a larger plan. Fifty years after, the cathedral was burnt to the ground. It was again rebuilt in 1075, and once more burnt to the ground in 1137. It was again commenced in 1171 by archbishop Roger, but the first stone of the present edifice was laid in 1228, by Walter de Grey, archbishop The north transept was built by John de Romain in 1260, and on the 7th of April, 1291, the first stone of the nave was laid by him. The new choir was built in 1361, and a new steeple in 1380. In 1829, Jonathan Martin, a lunatic, imagined that he was authorized to attempt the destruction of the cathedral; he therefore attended the evening service on the 1st February, after which he concealed himself behind a tomb. About midnight he collected all the prayer-books, music-books, &c., in two heaps, under one of which he placed a lighted candle, and under the other a bundle of lighted matches. He did not leave the building until three o'clock, and the fire was not discovered until it had been burning for some

hours, therefore the damage done was so extensive that it was estimated at £60,000, and vast sums were raised for the restoration of the Minster. The earl of Scarborough presented an organ, on the completion of the building, which was said to be the largest in the world. Eleven years after, a workman, repairing the clock, having left a lighted candle carelessly stuck on to a piece of wood, this noble edifice again nearly suffered total destruction. Thus it is considered that more than £100,000 have of late years been spent upon York Minster.

285. **York Castle** was built in the year 1067, by king William I., on the site of an old Roman castle which had existed before the Conquest. It was repaired in the time of Richard III., and entirely rebuilt in 1701. "Clifford's Tower" was built on a mount near the castle by Sir Walter L'Espe. A dreadful massacre of the Jews took place on the 11th of March, 1190, at Clifford's Tower. More than 2,000 persons perished.

286. **Louisborough Castle** is a very interesting ancient building. The date of foundation has never been ascertained, but the castle was in existence before 489.

287. **Crake Castle** was built by the Romans. It was used as a royal palace by the Saxon kings.

288. **Knaresborough Castle** was built in the year 1100, by Baron Serle de Burgh. Richard II. was imprisoned here in the king's chamber. The castle was thoroughly repaired in 1590. It is now in ruins.

289. **Leeds Castle** was founded by Ilbert de Lacy. In this castle, as well as the last mentioned, Richard II. was confined in 1399.

290. **Malton Castle**, founded by the Saxons. Eustace de John delivered the castle to David of Scotland, 1135. It was taken from the Scots by Thurston, archbishop of York.

291. **Mulgrave Castle**, near Whitby, was founded by duke Wada, a Saxon. It was rebuilt by Peter de Malo-Lacu, and Isabella his wife, in the reign of king John, who called it Mouth-Grace, changed by the country people to Mouth-Grave. In 1625 it came into the possession of Edmund, earl of Mulgrave.

292. **Pontefract Castle** was built in 1069, by Ilbert de Lacy. It was besieged three times in the reign of Charles I.

293. **Richmond Castle** was founded in 1070 by earl Alan. The ruins are very majestic.

294. **Ripley Castle**, built by Sir William Tugilby, in queen Mary's reign.

295. **Sandal Castle**, founded in 1317, by John, earl of Warren. Richard III. resided for some time in Sandal Castle.

296. **Scarborough Castle** was built in 1140 by William de Aross; added to in 1170 by king Henry II.

297. **Sheffield Castle** was built in the reign of Henry III.

298. **Wressle Castle** was founded by Thomas Percy, earl of Worcester, about 1380—5. It continued in the Percy family till 1682, when lady Elizabeth Percy, then in possession, married Charles Seymour, duke of Somerset. The Seymour family retained it for some years. The castle was demolished in 1750.

CUMBERLAND.

299. **Carlisle Cathedral**, some part of which is of Saxon architecture, has been erected at various periods. The choir was built in the reign of Edward III., about 1328. The nave and south aisles were built by William Rufus. There are some remarkable ancient legendary pictures in the aisles; over each painting is a distich, in uncouth rhyme. Amongst them are St. Augustine, St. Cuthbert, and St. Anthony. St. Catherine's chapel, adjoining the south transept, was built by John de Capella. The cathedral was much injured in the civil wars of the Commonwealth.

300. **Carlisle Castle** was built in 680, the walls being nine feet in thickness. Mary Queen of Scots was imprisoned here.

301. **Bewcastle Castle**, now in ruins, appears to have been square built. It was destroyed by Cromwell's army in 1641—3.

WESTMORELAND.

302. **Priory of Bondgate.**—At the north end of Bondgate is Battleburgh, or Battlebarrow, where was a priory for White Friars, founded in 1281 by the Lords Clifford, Percy, and Vescy.

303. **Appleby Castle** was founded before the Conquest. It was repaired in 1651, having then been uninhabitable for nearly a hundred years. It was entirely rebuilt in 1686.

304. **Howgill Castle**, supposed to have been built about 1000 or 1200. The walls were very strongly built, the remains of some being ten and a half feet thick.

305. **Kendal Castle**, the date of foundation of which seems to be uncertain, must be pretty ancient, as in 1670 it is said to have been "ruinous." The towers were repaired in 1813.

306. **Lowther Castle** is a magnificent building, entirely of white stone. It has eight lofty towers. The castle was founded in 1808. The grounds are most lovely.

307. **Pendragon Castle** is reported by tradition to have been

founded by Uter Pendragon, the fabled builder of Stonehenge. It was burnt down in 1341, but was repaired in 1660. It was again demolished by the Earl of Thanet in 1685.

LANCASHIRE.

308. Lancaster Castle was founded partly by the Romans and partly by the Saxons. Commenced in 124 by Agricola, the Roman General.

309. Naworth Castle was built in 1330. Mention is made of a dark, narrow, winding staircase, with many strong doors plated with iron. The chapel in the castle is very antique.

310. Scaleby Castle is built in a magnificent manner. It was much defaced by Cromwell's army, and little of the ancient walls is left, but the building appears to have been very strongly built, the walls being of great height and of immense thickness.

CHESHIRE.

311. Chester Cathedral, founded 660. Refounded by Hugh Lupus in 1485. The bishopric of Chester dates from the reign of Henry VIII. It is a large heavy building of red stone. Hugh Lupus was buried in the chapterhouse of the cathedral.

312. St. Werburgh's Abbey, Chester, supposed to have been founded about 660 by Wolfhere, King of Mercia. It was restored by the Princess Ethelfleda, daughter of king Alfred, in the reign of Athelstan.

313. Chester Castle was *rebuilt* by William I. in 1084; and was founded by the Saxons.

314. Frodsham Castle was entirely consumed by fire in 1642. The castle was bestowed by Edward I. on David, brother to Llewelyn, the last sovereign Prince of Wales.

SHROPSHIRE.

315. Shrewsbury Abbey, founded in 1083 by Roger de Montgomery.

316. Bridgenorth Priory, founded by John Talbot, earl of Shrewsbury.

317. White Ladies Priory was built by the Saxons.

318. Bridgenorth Castle was founded about the year 800, by the Danes.

319. Ludlow Castle was built in 1097 by Roger de Montgomery. It became a royal residence in the reign of Henry I. It was seized by Simon Montfort in the reign of Henry III. In the reign of Henry VII., prince Arthur resided here. Henry VIII. and queen Elizabeth held some grand courts here. In 1616 Prince Charles, son of James I., visited the castle.

HEREFORDSHIRE.

320. Hereford Cathedral was founded by the Saxon king Offa. In about 200 years it was rebuilt by bishop Athelstan. In the same year the cathedral was destroyed by fire, but rebuilt by Robert de Lozinga in 1079; enlarged by bishop Raywelm in Henry I.'s reign. The cathedral is 325 feet long, 100 feet wide, and 91 feet high. The Saxon chapel and chapter-house were very beautiful, but both have been destroyed within the last century.

321. Hereford Castle was founded by Harold, son of earl Godwin, on the site of a building erected in 908 by Edward the Elder.

322. Wigmore Castle was founded in the time of Edward the Elder, by Ernest Mortimer; and was rebuilt by William Fitz-Osborne.

323. Clifford Castle, built by Ernest Fitz-Osborne about the time of the Conquest, is noted as the birthplace of Fair Rosamond de Clifford in 1162.

324. Goodrich Castle was built by king Canute, and added to after the Conquest. The dungeon seems to have been built about the time of Edward III. It was besieged both by the Royalists and by the Parliamentary armies in the time of the civil wars in Charles I.'s reign, being in possession of both parties alternately.

GLOUCESTERSHIRE.

325. Gloucester Cathedral was formerly the Abbey Church. It was erected, and added to at different periods, from 1089 to 1518. The tomb of Edward II. is supposed to be one of the most ancient pieces of sculpture in England. Robert, duke of Normandy, son of William the Conqueror, is buried here. He was imprisoned for 26 years in Cardiff Castle, and died in 1134. There is a remarkable monument in the cathedral to the memory of Abbot Terle, the founder after the fire of 1087, who died in 1104. Edward II. paid a visit to the Abbey in 1319. The tomb is of alabaster, and extremely interesting.

326. Flaxey Abbey, founded in the reign of Stephen by Roger Fitz-Milo, in memory of his brother, who was killed by an arrow while hunting.

327. Hayles Abbey, founded by Richard, brother to Henry III., in 1246. In 1271 the abbey was destroyed by fire, but was rebuilt by the founder. Richard died in the following year, and was buried in the abbey with his wife and son.

328. **Tewkesbury Abbey** was founded in the time of the Saxons, and was a building of great importance in king John's reign. The abbey church is famed for the beautiful monuments it contains, particularly those of Elizabeth, daughter of William de Montacute, earl of Salisbury, and her three husbands, Giles de Badlesmere, Hugh le Despenser, and Sir Guy de Brian. The last named was standard-bearer to king Edward III. George, duke of Clarence (brother of Edward IV.), and his wife Isabel, daughter of the earl of Warwick, all of whom lived in an age remarkable for its horrid mixture of pleasure and cruelty, were buried in this abbey. The duke of Clarence was found dead in his bed under circumstances of great suspicion.

GEORGE, DUKE OF CLARENCE.

329. **Cirencester Abbey**, founded in the early time of the Saxon kings.

330. **Winchcomb Abbey** was built on the site of an old castle, in 798, by Kenulph, King of Mercia, who was buried in the Abbey Church. The abbey was destroyed by the Danes. Rebuilt in 985 by Oswald, Bishop of Worcester.

331. **Deerhurst Priory**, founded by Duke Dodo, in 715. Destroyed by the Danes. Rebuilt 980. Repaired 1056, enlarged 1250, and again in 1422.

332. **Newent Priory**, founded by Roger Montgomery in 1066.

333. **Sudley Castle** was built in the reign of Henry VI. by Ralph Boteler. It was sold by Lord Sudeley to king Edward IV., and remained in the possession of the Crown until the reign of Edward VI., who granted it to Sir Thomas Seymour

334. **Thornbury Castle** was founded by Edward Stafford, Duke of Buckingham, but the building was not completed, having been put a stop to by his execution in 1522. The castle is an excellent specimen of Gothic architecture as applied to castellated houses.

335. **St. Oswald's Priory**, founded by Princess Ethelfleda.

336. Berkeley Castle was built about the same time by Roger de Berkeley. Edward II. was murdered here in September, 1327, having been brought from Kenilworth by order of the queen.

337. Cirencester Castle appears to have been founded by one of the Saxon kings, but in what year is uncertain. It was demolished by order of Henry III.

SUFFOLK.

338. Bury St. Edmund's Abbey seems to have been founded by King Athelstan.

339. Eye.—At Eye was formerly a castle and priory built by Robert Malet about the time of the Conquest.

340. Freston Tower.—On the banks of the Orwell a strong quadrangular brick building was built (as is supposed) by the Latimers, to whom the estate passed from the Frestons about the commencement of Henry VIII.'s reign. The building is about ten feet by twelve, six stories high, communicating by a winding staircase.

341. Ipswich, Cardinal Wolsey's College.—No part of this building remains but the gate. The college was built in June, 1528. The square stone tablet upon the gate contains the arms of King Henry. It is said the king took great offence that the cardinal placed his own arms above his Majesty's. Cardinal Wolsey was born at Ipswich, 1427. Queen Elizabeth visited the town in 1561.

342. Bungay Castle was built in the reign of Stephen, and demolished by order of Henry III.

343. Clare Castle.—Date of foundation uncertain, though it certainly seems to have existed in the time of Canute. The founder was Richard de Clare, an ancestor of the founder of Clare College, Cambridge.

344. Framlingham Castle.—The outer wall only remains of this once fine castle, which was founded by one of the first Saxon kings. It remained in possession of the reigning sovereign until the time of Henry I., who granted it to Roger Bigod. Queen Mary resided at Framlingham Castle after her assertion of claim to the throne, until she went to London to take possession of the crown.

345. Walton Castle was built by the Romans. Many coins, urns, and rings have been found here, doubtless of Roman origin. It was entirely demolished by Henry II., who ordered the stones

with which the castle was built to be carried into all parts of Walton, Trimley, and Felixstow, to pave the footpaths.

346. **Bury St. Edmund's Abbey,** founded by Sigbert, king of the East Angles, about 638.

ESSEX.

347. **St. John's Abbey, Colchester,** founded by Eudo Dapifer, 1097.

348. **St. Botolph Priory, Colchester,** founded by Eynulph, a monk, in 1100.

349. **Colchester Castle** was built by Edward the Elder, and rebuilt by William I.

350. **Pleshy Castle,** built by the Romans, and enlarged by William de Magnoville, about 1160—1180. This castle was in the possession of the Duke of Gloucester, uncle of Richard II., 1372—97. The duke was put to death, September, 1397, and was buried in Pleshy church, but his remains were afterwards removed to Westminster Abbey.

KENT.

351. **Canterbury Cathedral** was founded by Augustine, who died in 605. It was much injured by fire in 1161, and was burnt to the ground in 1174. The tower of the cathedral and Christ Church gate were built about 1510—17. The entire building was repaired in 1787. Thomas à Becket, archbishop, was murdered in the west transept, December, 1170. Henry II., two years after, made a pilgrimage to Becket's tomb, in the cathedral, which is also famous for being the burial-place of Henry IV. and his queen, Joan of Navarre, and Edward the Black Prince.

352. **Rochester Cathedral,** founded by king Ethelbert, 597, was rebuilt by Gundulph, about 1077—79, and has been twice nearly destroyed by fire. It is small, compared to other cathedrals, but has within it many interesting monuments.

353. **Boxley Abbey,** founded by William d'Ipris, in 1146. Edward II. and his queen Isabella resided here for a short time in the year 1221.

354. **Canterbury Abbey,** founded by Augustine, 598. The ruins are called St. Augustine's Abbey. It appears to have been a very beautiful building. The marriage of Charles I. with the Princess Henrietta, June 13, 1625, took place in this abbey. It is the burial-place of Augustine, the founder; also of Ethelbert, and other kings of Kent, and of queen Bertha and queen Emma.

355. **Faversham Abbey,** formerly a Saxon palace.

356. **Tunbridge Priory,** founded by Richard de Clare, earl of Hertford, in the last year of the reign of Henry I., was burnt to the ground in 1351, but was soon rebuilt, and was one of the many priories suppressed in 1520—25, to endow Wolsey's colleges at Ipswich and Oxford.

357. Greenwich is noted as the birthplace of King Henry VIII. and his daughters, Mary and Elizabeth. / The HOSPITAL was formerly designed for a palace, and was much enlarged by order of William and Mary.

358 **Rochester Castle,** built by one of the kings of Kent about 490, upon the site of one still more ancient. It was repaired by order of William I.; rebuilt of stone by William Rufus, and is thought to be a very perfect example of a baronial castle. The entrance to the bahium, or outer court was secured by gates with a ponderous grating or portcullis, and the walls by towers or battlements.

ROCHESTER CASTLE.
ENTRANCE GATE, WITH PORTCULLIS.

359. **Allington Castle,** built by one of the Saxon kings. Birthplace of Sir Thomas Wyatt; visited by Henry VIII.

360. **Canterbury Castle,** built by Julius Cæsar; rebuilt on the ancient site by William I.; enlarged by Henry II.

361. **Deal Castle** was founded in 1539.

362. **Hever Castle,** erected in the time of Edward III. by William de Hevre, was for some time in the possession of Sir Geoffrey Boleyn, great grandfather to Anne Boleyn.

363. **Queenborough Castle,** founded by the Saxons; rebuilt on a larger scale by Edward III.; repaired by Richard III. and Henry VIII.

364. **Dover Castle,** of Roman origin, was much improved by earl Godwin in the reign of Edward the Confessor, and many additions seem to have been made by subsequent English sovereigns. The walls are very thick. It is supposed a church was erected in the castle about the end of the 7th century.

365. **Sandgate and Sandown Castle,** built by Henry VIII.

366. **Tunbridge Castle,** erected soon after the Norman Conquest

by Richard, earl of Clare. It has been visited by several of our English sovereigns and princes.

367. **Walmer Castle** was built 1539.

368. **Upnor Castle** was founded by Queen Elizabeth.

SURREY.

369. **Chertsey Abbey** was founded in 604, and was the residence of some of the Saxon kings.

370. **Blechingley Castle**, built by Richard de Tonbridge. Demolished in the time of Henry III.

371. **Farnham Castle**, built by King Stephen's brother Henry. Demolished by Henry III. Rebuilt, but again destroyed in 1642; again rebuilt by the Bishop of Winchester.

372. **Guildford Castle**, date of foundation and founder uncertain, though it is supposed to be of Saxon origin.

SUSSEX.

373. **Lewes Priory**, founded by Gundreda, daughter of William I. The husband of Gundreda built a castle here.

374. **Sleyning Priory** was founded by Edward the Confessor.

375. **Battle Abbey** was founded by William I.

376. **Hastings Castle** was founded by Sir Walter Bricet, in the reign of Richard I.

377. **Chichester Cathedral** was founded in the reign of William the Conqueror, but was not completed till 1108. It was burnt down six years after. Rebuilt and again burnt down in 1187. Great alterations and some additions were made in the next three centuries. The central tower was built by Bishop Neville in 1222, the spire in 1337. Terrible havoc was committed by the parliamentary soldiers, when in 1642 some of the troops were quartered in the church. There are many pictures on the walls, and some interesting monuments—William Chillingworth, Collins the poet, &c. The spire, which is nearly 300 feet high, and great part of the cathedral, were much injured by the recent fall.

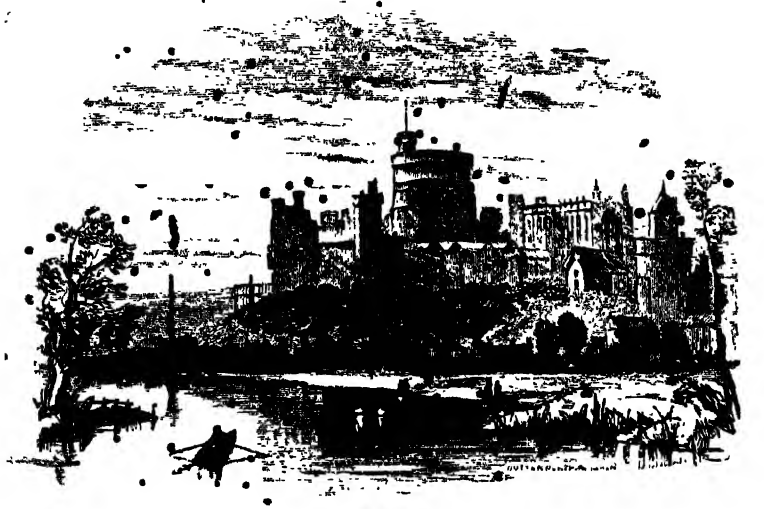
378. **Arundel Castle**.—Very ancient, founder unknown. Here the empress Maud resided for a time when she arrived in England to claim the crown.

BERKS.

379. **Abingdon Abbey**, founded by Cissa. Destroyed by the Danes. Rebuilt by Edgar. Enlarged by Ethelwold, who built the Abbey Church. Henry I. was educated here.

380. **Reading Abbey**, founded by Henry I. on the site of an old castle. This abbey is noted as the burial-place of the royal founder.

381. Windsor Castle.—This royal residence was founded by William the Conqueror. Enlarged by Henry I. Edward III.



WINDSOR CASTLE.

was born at Windsor. Edward IV. rebuilt St. George's Chapel. Additions were made to various parts of the Castle by Henry VIII., Edward VI., Mary, Elizabeth, Charles I., Charles II., and later sovereigns. Amongst celebrated personages interred in St. George's Chapel may be mentioned Edward IV. and his queen, Henry VI., Henry VIII. and Jane Seymour, Charles I., and later sovereigns down to William IV. Twelve counties may be seen from the Round Tower.

382. Donnington Castle, an ancient building, once the residence of Geoffrey Chaucer. It was rebuilt in the time of Richard III.

383. Wallingford Castle, of Roman origin.

HAMPSHIRE.

384. Winchester Cathedral was built by the early Saxon king Kin-gils, and considerably improved by many of his successors. Egbert was crowned king of all England in this city. Edward the Confessor was also crowned here. It was the birthplace of Henry III., and Arthur, son of Henry VII. It was the scene of queen Mary's marriage with Philip of Spain, and again is noted as the burial-place of William Rufus and St. Swithin.

385. **St. Mary's Abbey, Winchester,** founded by Alfred's queen Alswitha. She resided here after king Alfred's death.

386. **Netley Abbey,** founded by Henry III. The views are very beautiful. Elizabeth spent three days at Netley in 1560. The ruins have often furnished a theme for poets.

387. **Tichfield Abbey,** founded 1231, is celebrated as being the scene of the marriage of Henry VI. of England with Margaret of Anjou, in April, 1445. The queen was then in her sixteenth year, and is described as very fair and beautiful. Margaret was the mother of Edward of Lancaster, and with her youthful son, held a conspicuous place in the history of the battles of the Roses. Margaret, after the battle of Tewkesbury, was taken as a prisoner of state to Windsor; but recovered her freedom. She died in 1180, at the age of 50. Charles I was concealed in this abbey in his flight from Hampton Court, 1647.

MARGARET OF ANJOU.

388. **Beaulieu Abbey,** founded in 1204 by king John. His mother, queen Eleanor was buried here. Queen Margaret of Anjou and her son sought and obtained refuge in this abbey.

389. **Southwick Priory,** founded by Henry I. 1133. Here Henry VI. was married to queen Margaret of Anjou.

390. **Hyde Abbey,** founded by Alfred the Great, burnt by Stephen's army; rebuilt by Henry II.; is the burial-place of Alfred, his queen Alswitha, and his two sons.

391. **Romsey Abbey,** founded by Edward the Elder. Edmund, his son, was buried in the abbey church.

392. **Winchester Castle** was built by William I.

393. **Odiham Castle,** built before or in the reign of king John. Here David Bruce, king of Scotland, was confined eleven years.

394. Carisbrooke Castle, Isle of Wight, was founded by the Britons. It underwent a long siege in 530. Was enlarged by Edward the Confessor, also by queen Elizabeth, 1601. This castle is noted for the imprisonment of Charles I. within its walls. A small room, said to have been his bedchamber, is still shown. During the term of his imprisonment a design was formed to enable the king to effect his escape. He was to attempt to force his way through the window, which was secured by iron bars. Some gentlemen of the island having agreed to be outside with a swift horse, on which the king, with a guide, was to be conveyed to a vessel stationed in readiness. The unhappy Charles, however, found the bars were too close together to allow him either to advance or retreat. His groans could be heard by his friends, but nothing could be done to relieve him. After repeated efforts he forced his way back, and placed a candle in the window to intimate that the design was frustrated. A second attempt was made, the king being provided with filer to file away the bars. This plan, however, was discovered by his enemies. Princess Elizabeth, daughter of Charles I., was found dead in the castle, with her head resting on the open Bible. She died eighteen months after her father, and was buried at Newport.

WINDOW THROUGH WHICH CHARLES I. ATTEMPTED TO ESCAPE.

DORSETSHIRE.

395. **Corfe Castle,** built before 980. It is supposed king Edgar was the founder. Here Edward, Edgar's son, was murdered by order of his stepmother, Elfrida.

396. **Maiden Castle** was founded by the ancient Britons.

397. **Portland Castle,** built by Henry VIII. on the site of an old building called *Bow and Arrow Castle,* erected by William Rufus.

398. **Sherborne Castle**, built by one of the earliest Saxon kings.

DEVONSHIRE.

399. **Exeter Cathedral** foundation was laid in 1112 by bishop Warelwast, but he did not live to finish it. The throne in the choir, erected by John Boothe, bishop of Exeter, in 1465, is quite magnificent, and stands 52 feet high. The nave is 76 ft. wide and 175 ft. long. The interior is very beautiful. The roof of the chapter-house is of oak. The organ is the largest in Europe, those at Haarlem and York alone excepted, and the finest in tone. The Minstrels' Gallery is supported by thirteen pillars, with a niche between each two containing the statue of a musician. The monuments in the cathedral are very fine. The clock in the north tower exhibits all the phases of the moon, as well as the time of day. Miles Coverdale was bishop of Exeter. The first complete English version of the Bible was published under his direction.

400. **Bindon Abbey**, founded by Roger and Matilda de Newburgh, 1172.

401. **Buckland Abbey**, founded by Baldwin de Rivers, 1278. Here have long been preserved the sword and drum Admiral Sir Francis Drake took with him in his first voyage round the world.

402. **Rougement Castle, Exeter**, built by one of the West Saxon kings. Rebuilt by William I.

403. **Tiverton Castle**, built by Richard Rivers, 1106. Demolished by King Stephen. Rebuilt. It was the residence of Catherine, daughter of Edward IV., who married Lord William Courtenay. The castle was garrisoned for the king in the civil wars of Charles I.

404. **Totnes Castle**, built 1050—1100 by Judhael de Totnais.

CORNWALL.

405. **St. Germain's** ancient **Cathedral** Church, founded by King Athelstan.

406. **Restormel Castle**, an ancient and magnificent fortress, even in its ruins.

407. **Trematon Castle**, erected before the Conquest. Belongs to the Prince of Wales.

408. **Truro Castle** was built after the Conquest. Every vestige of it has long since disappeared.

STAFFORDSHIRE.

409. **Lichfield Cathedral** was built in 656. Rebuilt in 1148.

410. **Stafford Priory**, founded by Richard Peche, bishop of Lichfield, in 1180.

411. **Tutbury Priory**, founded at the same time as Tutbury Castle. It was seized by Cardinal Wolsey in 1534 to endow his college at Ipswich.

412. **Croxden Abbey**, built 1180. The ruins are very beautiful.

413. **Dudley Castle** was founded by a Saxon, named Dudo, about 760. It was besieged in 1644 and 1646.

414. **Heyley Castle**, built in king John's reign by Henry de Aldethlege. About two miles distant is Audley, where remains of a *very* ancient castle were visible many years ago.

415. **Stafford Castle** was built in 913 by Ethelfleda, countess of Mercia, sister of Edward the Elder.

416. **Tamworth Castle** was built in 914.

417. **Tutbury Castle.**—The date of foundation is unknown; but it is supposed to have been built before the Conquest. Mary Queen of Scots was imprisoned here.

DERBYSHIRE.

418. **Castleton Castle** (the ruins of which stand high) is of great antiquity. It appears to have been a royal residence in Saxon times. A tournament was held here in the time of William I.

419. **Duffield Castle.**—At Duffield was formally a castle. It was garrisoned against Henry II. by Robert de Ferrers; when he, to obtain pardon, surrendered his fortress, the king ordered it immediately to be demolished, 1325.

SHROPSHIRE.

420. **Shrewsbury Castle** was built by a Norman, Roger de Montgomery, in 1084.

NOTTINGHAMSHIRE.

421. **Newstead Abbey** was founded by Henry II., 1170.

422. **Newark Castle** was built by Alexander, bishop of Lincoln. King John died here.

423. **Nottingham Castle** was founded by William I. It was enlarged by Edward IV.

LEICESTERSHIRE.

424. **Leicester Abbey** was founded by Robert Bossu, Earl of Leicester, 1143. Cardinal Wolsey died at the abbey, November 29, 1530.

425. **Leicester Castle** was founded about 901 by Elfrida, daughter of Alfred the Great.

426. **Belvoir Castle** is a very handsome building. The old castle was founded by Robert de Belvedeir, standard-bearer to William I.

427. **Garendon Abbey**, founded by Robert Bossu, 1133.

428. **Laund Priory**, founded by Richard and Maud Basset in the reign of Henry I.

WILTSHIRE.

429. **Salisbury Cathedral.**—The first stone of the cathedral was laid by Bishop Poore, April 12, 1220, on the site of a wooden church erected in the previous year. The spire is 404 feet in height. The opening of this cathedral appears to have been particularly splendid. The exterior is very beautiful. The windows are handsome specimens of the Early English or Pointed style. The Commonwealth soldiers were quartered in the building and did much damage. The organ was the gift of George III.

430. **Amesbury Abbey**, founded by Elfrida, Edgar's queen. After Henry III.'s death, his wife, Eleanor, took the veil, and on her death, 1291, she was buried in the abbey church.

431. **Malmesbury Abbey and Castle** were founded about the same time, in the reign of Henry I. King Athelstan and other Saxon kings were buried here.

432. **Wilton Abbey**, founded by an earl of Wiltshire, 773. Here Editha, queen of Edward the Confessor, was educated. She rebuilt the abbey of stone. Queen Elizabeth visited Wilton in 1579.

433. **Devizes Castle**, built by Roger, Bishop of Salisbury, in the reign of Henry I. Herbert de Burgh, Prime Minister to Henry III., was imprisoned here in 1233. The castle was taken by Cromwell, 1645, but soon after Sir William Waller, who had the command of Cromwell's troops, was entirely defeated by Lord Wilmot and a small party of Royalists.

434. **Farley Castle**, built by Robert de Curthose. Margaret, the last Plantagenet princess, daughter of the duke of Clarence and niece of king Edward IV., was born in Farley Castle, 1473. She was the mother of Cardinal Pole, and was beheaded 1541.

435. **Ludgershall Castle**, built soon after the Conquest. It sheltered queen Maud for a short time after her flight from Winchester.

436. **Wardour Castle**, some ancient ruins standing near the present building. The castle was bravely defended by lady Blanch Arundel against the Parlimentary army, May, 1643.

WARWICKSHIRE.

437. **Warwick Castle** was founded by king Alfred's daughter, Ethelfleda, in 915. It was much enlarged and improved in William the Conqueror's reign, who gave it to Henry de Newburgh,

Earl of Warwick. In 1215 it was demolished by John Gifford, governor of Kenilworth Castle. It was repaired in Henry III.'s reign. Guy's Tower was built by Thomas de Beauchamp in 1394. From Edward IV. to Edward VI. this castle was in the possession of the Crown, when in 1547 it was granted to John Dudley, earl of Warwick. It was besieged by lord Northampton in 1642, and was repaired in the reign of Charles II.

438. **Arrow Castle** was built in the reign of Elizabeth, by Ludwick Greville. Only ruined remains of the edifice can now be seen.

439. **Combe Abbey** was founded by Richard de Conville in king Stephen's reign. It was the first abbey founded in Warwickshire for Cistercian monks. The abbey has been much improved at different times. The collection of pictures here is very fine.

440. **Rugby Castle.**—Some remains of an ancient castle have been discovered at Rugby. It is supposed to have been erected by king Stephen, and demolished by order of Henry II.

441. **Bilton Hall**, about two miles from Rugby, is famous for having been the residence of Addison, the poet. Part of the mansion was built by him, the remainder at various periods. Addison died on June 17, 1719, aged forty-seven years, leaving one daughter, then a child about twelve months old. She died at the age of seventy-nine, bequeathing the hall to the Hon. John Simpson.

442. **Kenilworth Castle.**—Kenilworth Castle is situated upon a rock, and the view from the ruins of the surrounding country is most extensive and picturesque. It was founded in 1120, by Geoffrey de Clinton, a man of humble parentage, but of great talents and acquirements. He was treasurer to Henry I. The castle did not long remain in the Clinton family, for when Henry II. came to the crown, he took possession of it, and placed a garrison there. His eldest son rebelled against him. In the reigns of king John and Henry III. large sums were expended on such buildings as assisted in making the fortress more defensible. Henry granted the castle to Sir Simon Montfort, earl of Leicester, and Elinor his wife for their respective lives; but as Leicester took up arms against his sovereign, Henry besieged the castle and took possession of it after a close blockade of six months, and then bestowed it on his youngest son Edmund. In the reign of Edward I. a grand tournament was held at the castle, consisting of a hundred knights and as many ladies. The promoter of the festival was Robert Mortimer, earl of March. Edward II. was imprisoned in Kenilworth castle, before his removal to Berkeley castle, Glou-

cestershire. The castle was again the property of the crown from Henry IV. to the fifth year of queen Elizabeth's reign, when she conferred it on Robert Dudley, earl of Leicester. The earl entertained her Majesty in a most magnificent manner during her visit, July, 1573. In one apartment is a large and curious chimney piece of alabaster, finely ornamented with the armorial bearings, crest, and motto of the Leicester family. The castle and gateways were all built of freestone, the walls being in many parts ten and fifteen feet in thickness. The ruins are very extensive, and present combinations of the most romantic and beautiful description. At the celebration of peace, in 1815, the remains were illuminated.

443. Tamworth Castle was founded by the Lady Ethelfleda. The Marmions were lords of the castle from the time of the Conquest to the end of Edward I.'s reign.

NORTHAMPTONSHIRE.

444. Daventry Priory, founded by Hugh de Leycester, 1090. It was dissolved, with many others, by Henry VIII., and granted to Cardinal Wolsey for his new colleges at Oxford and Ipswich.

445. St. Andrew's Priory, Northampton.—Founded by Simon St. Liz; the other priories in the town founded, 1245, by Simon Mountford; 1271, by Thomas Chetswood; 1240, by John Dalyngton; 1102, by William Peverel.

446. Peterborough Cathedral.—The foundation-stone of the monastery at Peterborough was laid by Peada, in 656. The stone was so large that eight yoke of oxen could with difficulty draw it. The name of the place, which had before been Medeshamsted, was in 970 changed to Burgh, by king Edgar, who, with bishop Athelwold, rebuilt the monastery. Burgh was changed to Gildenburgh, or Golden City, and this was again altered to Peterburgh. The monastery had been burnt down about 900, and again in 1116. In 1118 a new foundation was commenced by John Salisbury, which was the origin of Peterborough cathedral. Queen Catherine, first wife of Henry VIII., was buried here in 1535, and queen Mary of Scotland in 1587; twenty-five years after, the remains of the latter were removed, by order of her son king James, to Westminster. In 1643 the cathedral was almost destroyed by the parliamentary forces, and was not repaired for eight years.

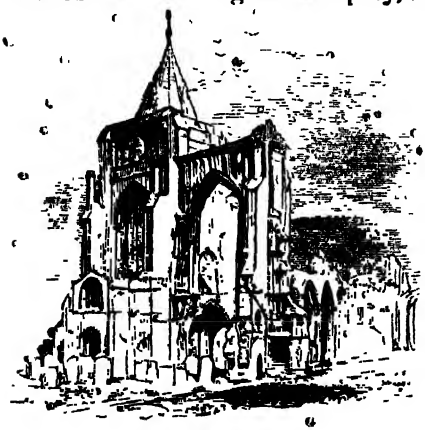
447. Fotheringhay Castle was built about the time of the Conquest, the founder being Simon St. Liz, earl of Northampton. It was rebuilt in Edward III.'s reign. This castle was the scene of Mary Queen of Scots' execution.

448. Northampton Castle was also founded by Simon St. Liz.

LINCOLNSHIRE.

449. Lincoln Cathedral was founded, 1086, by bishop Remigius, burnt down in 1124, rebuilt by bishop Alexander. In 1244, the tower fell down. It was repaired 1279. Again in 1290. It has been added to at different times. Little remains of the early fabric, but much of the present building was founded by Hugh de Grenoble, 1186 to 1200. The Bishop's Porch, though very mutilated, still retains much of its original beauty. There are many objects of interest in the cathedral.

450. Crowland Abbey, founded by Ethelbald, king of Mercia, is celebrated for its great antiquity, such various styles of architecture as are seldom seen grouped together, and as being the first church in which bells were used. The origin of Cambridge University is also attributed to monks sent by Joffrid, a Norman monk, from this abbey to lecture in a barn in that town. In 1091 the abbey was much injured by a fire occasioned by a plumber leaving his fire for the night to be at his work early in the morning. A valuable library of upwards of 700 volumes being thus destroyed, abbot Jaculph shed many tears, and loudly lamented the loss of his treasures. The first stone of the new abbey was laid on 7th March 1113. Henry VI. sought the retirement of Croyland Abbey during the civil war of 1460.



CROWLAND ABBEY.

451. Sixhill Abbey was founded in the time of king Stephen, by Ernest de Grelle. Mary Setor, Bruce's sister, was imprisoned here by order of King Edward I., 1306.

452. Thornton Abbey was founded, 1139, by William le Grass, earl of Albemarle. Henry VIII. and his queen paid this beautiful abbey a visit in 1541.

453. St. Leonard's Priory, Stamford, was built in the seventh century by Wilfred, and rebuilt by Wm. the Conqueror in 1082.

RUTLANDSHIRE.

454. **Brooke Priory.**—Founded by Hugh de Ferrars, in the time of Richard I.

455. **Oakham Castle** appears to have been a very ancient building. The castle gate is covered with horseshoes, from a curious custom that has prevailed from the erection of the castle, of every baron passing through Oakham nailing one shoe from his horse upon the castle gate. Some of them are handsomely gilt.

CAMBRIDGESHIRE.

456. **Ely Cathedral.** The most ancient parts of this cathedral were built in the time of William Rufus. It was added to in the reign of Henry I., and in 1200, 1234-50, 1274, and 1322-42. Repaired in 1757 and 1762. Ethelbert built a church which Etheldreda repaired, and in 673 erected a monastery. It is a noble-looking building. The tower was built by bishop Rydel between 1174-89. It is 170 feet high. The Erpingham gateway is truly a superb work, founded by Sir Thomas Erpingham.

457. **Denny Abbey**, built about 1150. Edward III. presented it to Mary, Countess of Pembroke, who died 1374, and was buried in the abbey.

458. **Thorney Abbey**, founded by Sexulphus, abbot of Peterborough, in the time of Etheldreda. Destroyed by the Danes, and refounded by Ethelwold, bishop of Winchester, 972.

459. **Linton Priory**, granted by Henry VI. to the Master and Fellows of Pembroke College.

460. **Cambridge Castle** (now used as the county prison) was founded by the Romans.

461. **Wisbeach Castle**, built of stone by William the Conqueror. Destroyed in the reign of Henry II. Rebuilt of brick in 1478-84 by Merton, bishop of Ely.

NORFOLK.

462. **Norwich Cathedral.** The foundation-stone of the cathedral was laid in 1096 by Herbert de Losinga. It was considerably enlarged in 1171-91, and 1272-3 and 1430. It was repaired in 1460-1500, again 1763, and 1807. The **Priory** was built by the founder of the cathedral in 1101. The most ancient part of the castle was built by king Canute. It was enlarged by William Rufus, and repaired by Edward II.

463. **Castle Rising Castle**, built by William de Albini, 1176. queen Isabella, wife of Edward II., was confined in this castle from 1330 to 1358. She was the daughter of Philip, king of France.

464. Caister Castle, the erection of which dates from 1449, has been said by some writers to be the oldest *brick* building in England. It was built by John Fastolff.

SOMERSETSHIRE.

465. **Wells Cathedral** seems to have been founded about the time of Edward the Confessor. It was rebuilt in the time of William Rufus. The lady-chapel is said to be a perfect gem of ecclesiastical architecture.

466. **Bristol Cathedral** originated from a priory founded by Robert Fitzharding, 1148, which was changed into an abbey by Henry II., and again into a cathedral church by Henry VIII.

467. **Bath Abbey** was founded by Oliver King, bishop of Bath and Wells.

468 **Glastonbury Abbey** was built in the reign of Ina, 708, or *rebuilt*, for it has been said by some authors to have been founded by Joseph of Arimathea. It was demolished by the Danes, 873, and rebuilt by King Edward. In 1184 it was destroyed by fire, rebuilt by Henry III., again destroyed in 1276, this time by an earthquake. It appears to have been refounded soon after, and some parts are still to be seen, though quite in ruins.

469. **Taunton Castle**, built about 700 by Ina, king of the West Saxons. Destroyed in 722, by Ina's queen Ethelburga, with a view to induce him to give up his royal residence, resign his crown to *her* brother, and retire into a monastery. It was rebuilt after the Conquest, but was demolished many years since, and a boarding school for young ladies built upon its site.

WORCESTERSHIRE.

470. **Worcester Cathedral** was founded by the Saxons, but was burnt by order of Hardicanute, before the Conquest, when it was rebuilt and again burnt in 1113. It was again burnt, for the third time, in 1202, again rebuilt, and consecrated in 1218. In 1301 it was repaired; again in 1320, and 1386. The length of the exterior is 514 feet, the breadth 78 feet, the height 68 feet. The tower is 200 feet high. There are many fine monuments. Prince Arthur's chapel contains the tomb of Prince Arthur, with this inscription:—"Here lyeth buried Prince Arthur, the first begotten sonne of the right renowned King Henry the Seventhe, which noble prince departed out of this transitory life at the Castle of Ludlow the seaventeenthe yeere of his father's raygne, and in the yeere of our Lord God one thousand five hundred and two."

471. **Worcester Castle** must have been a building of some antiquity, as in the reign of Henry VIII. it was completely dilapidated.

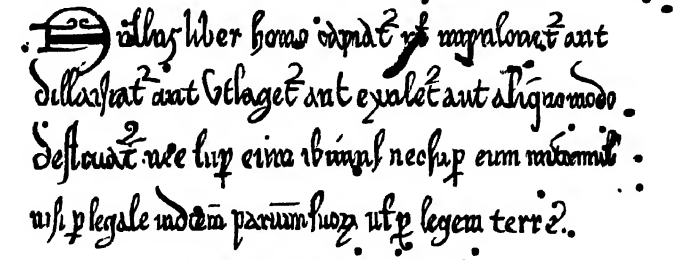
472. **Holt Castle** was the seat of the first hereditary Sheriff of Worcester. It was founded by the Beauchamp family.

OXFORDSHIRE.

473. **Oxford Cathedral** is of various dates. Prior to the foundation of Christ Church College it formed part of the priory of St. Frideswide. The building is undoubtedly Norman, built at two, if not more, different periods. The spire, though not a portion of the original, is one of the oldest in the kingdom.

474. **Osney Abbey** has not a vestige now remaining. Henry VIII., having erected Oxford into a see, fixed it at this abbey, but subsequently removed it to his new College of Christ Church, then called "The College of King Henry the Eighth." The bell known as "Great Tom of Oxford" was brought from this abbey.

475. **Oxford Castle** was built by Robert d'Oiley, a Norman, who in 1141 gave it up to the empress Maud. It was besieged by king Stephen for three months, at the end of which time Maud made her escape, and the castle surrendered. Beaumont Palace, Oxford, built by Henry I., but of which nothing now remains, was the birthplace of Richard I., and also of king John, whose name will



PORTION OF "MAGNA CHARTA."

ever be associated with "Magna Charta." The charter is in Latin, written in a beautiful clear hand, and is as perfect as the day on which it was signed.

476. **Sherborne Castle** was founded in the fourteenth century by Sir Warener de l'Isle.

HERTFORDSHIRE.

477. **Abbey of St. Alban's**, founded by King Offa. It was frequently visited by Henry VI. and Edward IV. It is an interesting fact that this abbey and that of Westminster were used as

the *two first printing-offices*. This building displays every variety of architectural style, from the Saxon down to the fifteenth century. Henry VI. was defeated and taken prisoner, during the Wars of the Roses, at St. Albans. Part of the abbey gave way on February 3rd, 1832, and fell in in two masses. The noise is described as resembling the loudest thunder. Much damage was done, and the abbey is altogether very much out of repair.

478. **Hertford Priory**, founded by Ralph de Lienesey in 1060.

479. **Hertford Castle** was occasionally used as a residence by John, king of France, prisoner of Edward the Black Prince. It was built by Edward the Elder, 909.

480. **Anstey Castle** was built about the time of the Conquest by Eustace, Earl of Boulogne. Additions were made in the reign of king John. It was granted by Edward II. to Mary de St. Paul, Countess of Pembroke, for her life. It then passed to Edward III., who conferred it on Edward of Langley. Later it was in the possession of Jane Seymour, queen of Henry VIII.

481. **Bennington Castle** was built on the site of an old palace of the Saxon kings. Sir Charles Cæsar, son of Sir Julius Cæsar, is buried at Bennington. The castle is very ancient.

482. **Bishop Stortford Castle** was founded by the Saxons, and was a fortress of some importance in the time of king Stephen.

BEDFORDSHIRE.

483. **Dunstable Priory**, founded by Henry I., 1131, was intended for a cathedral by Henry VIII.

484. **Ampthill Castle**, built in the reign of Henry VI., was a residence of queen Catherine of Arragon.

485. **Woburn Abbey**, founded 1145, by Hugh de Bolebeck.

HUNTINGDONSHIRE.

486. **Huntingdon.**—King Edward the Elder built a **Castle** here in 917, on the site of a still more ancient one. It was much enlarged in the reign of Stephen by David of Scotland. A **Priory** was founded in 973 by Eustace Loveloft.

487. **Hinchinbrook House** is built on the site of an old nunnery. It came into the possession of the Cromwells in 1537. Queen Elizabeth was entertained here in 1564. It was also visited by James I. and Charles I. When Oliver Cromwell was at Hinchinbrook, then the residence of his grandfather, Sir Henry Cromwell, it is related that a monkey caught the infant Oliver from his cradle, and ran with him upon the lead that covered the roof of the house; but after alarming all the family, who brought out beds to

catch him upon, the monkey, after playing for some time with the child, brought him down in safety.

488. Ramsey Abbey, founded by Duke Ailwin, son of Athelstan. It was repaired in the reign of Ethelred II. It is the burial-place of Sir Oliver Cromwell and several of his family. The windows are large, and are still very beautiful, though much of the painted glass has been destroyed or removed.

489. Kimbolton Castle is undoubtedly very ancient, but no account of its erection seems to have been preserved. It was the residence of queen Catherine after her divorce from Henry VIII.

NORTH WALES.

490. Bangor Cathedral.—Built 616. Cathedral of St. Asaph, built 560.

491. Beaumaris Castle was built 1295.

492. Carnarvon Castle, built by king Edward I. in 1282. Edward II., first Prince of Wales, was born here.

493. Conway Castle, built by Edward I., in 1284. King Edward and queen Eleanor spent a Christmas here.

494. Denbigh Castle, founded by Henry Lacy in 1280. It was burnt during the battles of the Roses. When rebuilt seems uncertain. King Charles I. took refuge here in 1645. It underwent a four months' siege.

SOUTH WALES.

495. Landaff Cathedral was founded in the time of the Saxons. A new edifice was erected in 1751, within the old walls.

496. Cathedral of St. David's is also ancient, of Gothic architecture. The arches in the nave all spring from Saxon pillars.

497. Chepstow Castle was founded by William Fitz-Osborne, earl of Hereford. The ruins exhibit a Norman character. The grand entrance is very fine. Henry Martin was confined in this castle for thirty years, in the part called the round tower.

498. Tintern Abbey, founded by Walter de Clare in 1131. The choir was built in 1268. The roof fell long ago. The church was built in the form of a cathedral. The ruins of the abbey are very beautiful, and the forms of the windows are still preserved and appear to have been very elegant. Four immense, lofty arches still retain their original shape. The ruins are covered with masses of moss, ivy, and lichens. Several sepulchral effigies lie in a mutilated state in various parts, one of which is supposed to be in memory of the founder's great nephew, Richard Strongbow, earl of Pembroke.

499. Bedd Gelert Priory, founded by Prince Llewelyn. The well-known story of the prince and his dog is said to have originated the foundation. The prince, on his return home, was met at the door by his greyhound, Gelert, whose mouth was covered with blood. The Prince, entering the house, found his infant's cradle overturned the ground wet with blood. Supposing the child had been killed by the dog (which had been a gift to the prince from his father-in-law, King John), the prince drew his sword, and killed Gelert. A moment after, on moving the cradle, he found his son alive, quietly sleeping, and a wolf, slain by the faithful dog, by the infant's side. This had such an effect upon the prince, that he erected a tomb over the dog's grave, and afterwards, on founding the priory, he gave it the name of Bedd Gelert, or the Grave of Gelert. He also founded a monastery for the preservation of his son.

NEATH ABBEY.

500. Neath Abbey, founded by Richard de Granville in 1111. The ruins are of large extent. The only portions that retain their early character are the crypt and the remains of the church. There are evidences to show the vast extent and gorgeous ornaments of the fine structure. Huge masses of masonry are scattered about the inner courts. In a field adjacent to the ruin is a mutilated stone figure, that of Adam de Caermarthen, Abbot of Neath, A.D. 1203, holding in his hand the model of a church as its re-founder.

501. Llanthony Abbey, founded by Ernesi, chaplain to queen Maud, wife of Henry I. The ruins are very beautiful.

502. **Llangenwydd Priory**, founded by Roger, earl of Warwick, in the reign of king Stephen. It was granted by Henry VI. to All Souls College, Oxford, in the year 1441.

503. **Monmouth Castle** was founded by John de Monmouth. It came into the possession of John of Gaunt by his marriage with Blanch of Lancaster. Edward IV. granted it to William Herbert. Henry V. was born in Monmouth.

504. **Abergavenny Castle** was founded by Hameline Baladun about the time of the Norman Conquest, on the site of a still more ancient castle.

505. **Raglan Castle**, founded by William ap Thomas. The castle is famed for its beauty, and for the siege it underwent in the reign of Charles I. It was the residence of the Somerset family. Parts of the castle were built in the reign of Henry V. and Charles I. When entire it was five stories high. The greater part is now down. A stone staircase leads to the top of one of the towers, from which the prospect is lovely. The towers and gateway are said to have been particularly fine. The hall, with its roof of Irish oak, was erected in the time of Elizabeth. It was 66 feet long and 28 feet wide. The fireplace and chimney seem to have been very peculiar.

506. **Usk Castle** was built by the Romans. Edward IV. and Richard III. were born here. It afterwards passed to William Herbert.

507. **White Castle, or Blanch Castle.**—The ruins are very magnificent. It was erected to defend the north-eastern part of the county. The ruins are surrounded by a deep moat. No appearance of windows is to be seen. The walls are very thick. It is supposed to have been of great importance in the Norman era.

508. **Cardiff Castle**, where Robert, duke of Normandy, was confined by order of his brother William; founded some time before the Conquest. Robert was confined in the black tower, and died in 1133, after an imprisonment of 36 years. The castle sustained a long siege in the time of Charles I., but was at last betrayed into the hands of Cromwell, who led his troops into it through a subterranean passage.

509. **Pembroke Castle**, a beautiful place, of which the foundation seems very uncertain, some authors saying it was built before the Conquest, others in the reign of Henry I.

510. **Langharne Castle**, built by the Anglo-Saxons. It is mentioned in the Welsh annals as having been frequently taken by the

Welsh princes in their wars with the English. In king John's reign it was in possession of Sir Guido de Brian, who gave much land for the use of burgesses.

LLANSTEPHAN CASTLE.

511. "Llanstephan Castle, one of the oldest in Wales, crowns a bold eminence which projects into the Bay of Carmarthen, and defends the entrance of the river Towy, which falls into the sea at this point. By whom founded, whether by Roman or Briton, or to what precise era it belongs, are questions which have never been satisfactorily answered. Yet the very obscurity which hangs upon it imparts to its dilapidated walls, mouldering turrets, and grass-covered courts, an interest that is seldom or never felt in the survey of those castellated ruins which make a prominent figure in the pages of history."—*Dr. Beattie.*

SCOTLAND.

512. Aberdeen Cathedral, built in 1357, on the site of a more ancient one, added to from 1357 to 1518. It was destroyed by Cromwell's army.

513. Brechin Cathedral was founded by David I. about 1125-30. It was never completed. Part is used as the parish church.

514. Dornoch Cathedral is now used as the parish church. It was built between 1223—60. Restored in 1837.

515. Dunkeld Cathedral, built in the twelfth century. Additions made in the fifteenth century.

516. Glasgow Cathedral was seventy-four years in building, and was founded in the twelfth century.

517. **Edinburgh Castle**, date of foundation uncertain, very ancient. It was the royal residence in the reigns of the three Alexanders, William the Lion, and David I. Surrendered to the English in 1174; restored; again taken by the English in 1296, and was recovered by Randolph, earl of Moray, in 1313.

518. **Abergeldie Castle**, the residence of the late duchess of Kent.

519. **Balmoral Castle**, the residence of our beloved queen, was rebuilt in 1853.

520. **Bothwell Castle.**—The ruins of this castle are very beautiful and full of interest. It has undergone many sieges, and in the time of Wallace and Bruce was inhabited for three weeks by Edward III. of England.

521. **Loch Leven Castle.**—Here queen Mary was imprisoned for eleven months. The well-known story how William Douglas stole the keys of the castle while the family were at supper, and how George Douglas contrived the plan for Mary's escape, will ever make this castle an object of interest.

522. **Stirling Castle** was the birthplace of James II. of Scotland. Alexander I. died here in 1124. James V. was crowned, and James VI. baptized here.

523. **Linlithgow Palace.**—The site of Linlithgow palace is supposed to have been occupied by a Roman fort. There also was a castle, built in 1300 by king Edward I., and destroyed by Robert Bruce. Queen Mary was born here.

524. **Hamilton Palace.**—The oldest part of the present edifice dates 1691. The interior is very beautiful, and well worth visiting for the sake of the pictures.

525. **Melrose Abbey**, one of the most beautiful of all the Scottish abbeys, was founded by King David I. in 1136. It was ten years in building. Has been repeatedly destroyed and rebuilt. The heart of Bruce was buried in this abbey.

526. **Holyrood Abbey** was founded by David I. in 1128. The remains of many Scottish kings and princes are interred here.

527. **Holyrood Palace** was built in 1538.

IRELAND.

528. **Dublin Cathedral** was founded in 1190. The castle in 1220.

529. **Tuam Cathedral** was built in 1130.

530. **Pharos.**—The most noted antiquities of Ireland are the Pharos, or Round Towers, supposed to have been the work of the Phœnicians, the early settlers in Ireland. They vary in height from 70 to 130 feet.

531. ENGLISH SOVEREIGNS.

From WILLIAM I. to VICTORIA.

Name.	Born	Began to Reign.	Reigned Years.	Died.	Age	Buried at.	Line.
WILLIAM I.....	1027	1066	21	1087	60	Caen, Normandy.....	Norman.
WILLIAM II....	1057	1087	12	1100	43	Winchester...	,,
HENRY I.	1068	1100	35	1135	67	Reading	,,
STEPHEN.....	1105	1135	19	1154	49	Feversham ...	,,
HENRY II.....	1133	1154	34	1189	55	Fonteverard..	Plantagenet.
RICHARD I. ...	1157	1189	10	1199	42	,,	,,
JOHN	1166	1199	17	1216	50	Worcester ...	,,
HENRY III. ...	1207	1216	56	1272	65	Westminster.	,,
EDWARD I. ...	1235	1272	34	1307	68	,,	,,
EDWARD II. ..	1284	1307	19	1327	43	Gloucester.	,,
EDWARD III....	1312	1327	50	1377	65	Westminster.	,,
RICHARD II. ..	1366	1377	22	1399	33	,,	,,
HENRY IV. ..	1367	1399	13	1413	46	Canterbury...	Lancaster.
HENRY V.	1389	1413	9	1422	33	Westminster.	,,
HENRY VI. ...	1421	1422	38	1461	40	Windsor	,,
EDWARD IV. ...	1442	1461	22	1483	41	,,	York.
EDWARD V. ...	1470	1483	2m	1483	12	The Tower ..	,,
RICHARD III....	1453	1483	2	1485	42	Leicester	,,
HENRY VII. ..	1457	1485	23	1509	52	Westminster.	Tudor.
HENRY VIII....	1492	1509	37	1547	55	Windsor	,,
EDWARD VI....	1537	1547	6	1553	16	Westminster.	,,
MARY	1516	1553	5	1558	42	,,	,,
ELIZABETH	1533	1558	44	1603	69	,,	,,
JAMES I...	1566	1603	22	1625	58	,,	Stuart.
CHARLES I. ..	1600	1625	24	1649	48	Windsor	,,
OLIVER CROMWELL	1599	1649	11	1658	59		
CHARLES II. ...	1630	1649	36	1685	54	Westminster.	,,
JAMES II.	1633	1685	4	1701	67	Paris	,,
WILLIAM III. and MARY II.	1650 1662	1689	13 5	1702 1694	52 32	Westminster.	,,
ANNE	1665	1701	12	1714	49	,,	,,
GEORGE I.....	1660	1714	13	1727	67	Hanover	Brunswick.
GEORGE II. ..	1683	1727	33	1760	77	Westminster.	,,
GEORGE III. ...	1738	1760	60	1820	82	Windsor	,,
GEORGE IV. ...	1762	1820	10	1830	68	,,	,,
WILLIAM IV....	1765	1830	7	1837	72	,,	,,
VICTORIA	1819	1837					,,

METALS.

533. Platina, of all metals, is the heaviest, hardest, and most difficult to be melted. It is found in the sands of rivers in South America, and in the Ural mountains. It is never injured by air, water, or any simple acids. It is one of the perfect metals, as it loses nothing in value or weight by the heat of fire.

534. Gold.—Gold and silver are the only other two *perfect* metals. Gold, which is the more precious, is generally found in a rock called quartz. It is found in most hot countries, the East Indies, Brazil, New Mexico, and North America; in the Ural mountains, California, Australia, the north-eastern border of Europe, in parts of Russia; and also in the sand of rivers in Africa. It is sometimes found in pure nuggets, seldom in very large masses. The principal gold mines in Europe are those of Saltzburg and Hungary.

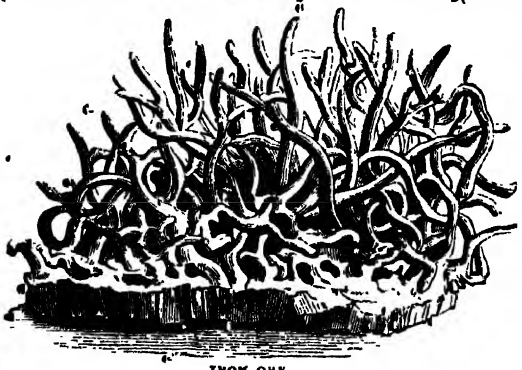
535. Silver.—At Pasco, in Peru, there are several silver mines opening into the houses of the owners. Combined with nitric acid,
536.] it produces caustic; with the addition of sap green, mark-
537.] ing-ink is formed. Silver is sometimes found in quicksilver mines, but the latter is never found in silver mines. It is chiefly
538.] found at Potosi, in South America. The mine was discovered by Hualpa, an Indian, whilst he was running after a wild animal. In laying hold of a branch of a tree he found several small pieces of silver sticking to the roots, which were torn up by his weight; but, making a confidant of a friend, who betrayed the secret to some Spaniards, he did not reap much benefit from his discovery,
539.] for the Spaniards took possession of the mine in 1545. Peru contains 784 mines of silver, as well as 69 gold mines.

540. Quicksilver.—Quicksilver, also known as mercury, is very sensitive to atmospheric changes. It combines easily with other metals. There is a famous quicksilver mine at Guanza Velica, in Peru; another at Idria, in Germany, which was discovered in
541.] 1497. The mines are used as a place of punishment for criminals, on account of the fatal atmosphere. It causes the hair to fall off, loosens the teeth, and softens the bones, producing great pain.
542.] With sulphur it forms vermilion, a paint of a brilliant red colour; with tin it is used for silvering the backs of looking-glasses.

543. Copper is a very ancient metal, dug from mines found in Devon and Cornwall, and in every part of the world. It unites
544.] readily with some other metals. With tin it forms BELL-METAL

545, 546.] and BRONZE. With zinc it makes PINCHBECK and 547, 548.] BRASS. With tin and nickel it will also form GERMAN SILVER. The largest copper mine is in Sweden; it is twelve hundred feet deep. There are three kinds, the common, the rose, and the virgin; the difference between them is in the preparation.

549. Iron.—The discovery of iron is very ancient. It is the most useful of all metals, and is found in most of the countries of Europe. Wrought iron is heated and beaten into shapes; cast iron is melted and run into moulds. British iron was cast in Sussex in the year 1543.



IRON ORE.

550. Steel is also a very useful metal; it is formed by heating iron with bone shavings and charcoal ashes, which render it white, and capable of receiving a very high polish. The extreme hardness of steel is acquired by being plunged, when very hot, into cold water. It must cool quickly, or it becomes soft.

551. Zinc.—There are no mines of zinc, but it is found in two ores—calamine and zinc-blende—in England, China, and Germany. It is a light metal, quickly affected by acids. It unites with most other metals.

552. Brass is a mixture of copper and zinc; the finest brass is manufactured at Geneva, in Switzerland.

553. Tin, found in Devon and Cornwall, is the lightest of all metals. Mines have been worked from a very distant period. 554.] Tin is used in the form of nitrate of tin to make a SCARLET 555.] DYE; with lead it forms PEWTER; mixed with gold, it imparts 556.] beautiful crimson and purple COLOURS TO GLASS; with flint 557, 558.] glass it makes ENAMEL. TINFOIL is tin made into very thin sheets.

559.] Lead is found in Northumberland, Cumberland, Derbyshire, Yorkshire, Cornwall, and in the counties of Cardiganshire, Denbighshire, and Flintshire, in Wales. Lead is a very soft

560.] metal, of a very poisonous quality. TYPE and STEREOTYPE metal are made from a mixture of lead with tin and antimony.

561.] WHITE-LEAD is made by holding thin plates of lead over hot vinegar. Red-lead, or minium, is used in the manufacture of glass.

MINERALS.

562. **Diamond** was called by the ancients adamant, from being the hardest of all gems. Diamonds are brought from the East Indies and several parts of South America. The principal mines are those of Raolconda and Coulour in the province of Golconda, and that of Soumelpoor or Goval in Bengal. Diamonds are found in sand and the crevices of rocks, covered with a thick earthy crust, from which they are drawn by long iron rods, with hooks at the end. The chemical nature of the diamond is charcoal or pure carbon, and it is perfectly inflammable.

563. **Precious Stones.**—The art of cutting precious stones is of great antiquity. The diamond is cut and polished on a wheel of soft steel. The ruby, sapphire, and topaz are cut on a copper wheel, with diamond dust, tempered with olive oil, and polished on another copper wheel with tripoli and water.

564. The **Jacinth, Emerald, Garnet, Amethyst, Agate,** and other stones, not of an equal degree of hardness with the diamond, ruby, &c., are cut on a leaden wheel with smalt and water, and polished on a tin wheel with tripoli.

565. The **Turquoise** and **Opal** are cut and polished on a wooden wheel with tripoli.

566. The **Ruby** is found in the sand of rivers, in Ceylon, and near the town of Sirian, the capital of Pegu. Rubies are also found in the same mines as sapphires.

567. The **Sapphire** is the hardest of all gems next to the diamond, which is the hardest. When heated, it becomes quite white. The most beautiful comes from the Capelan mountains of Pegu, and is found in gravel near rocks in Saxony, Bohemia, the East Indies, in France, and in Scotland. The darkest blue sapphires are called males, the lightest females.

568. The **Cyanite,** an inferior sapphire, is found in most countries.

569 **Garnets** are of two kinds—Occidental or Western, and Oriental or Eastern. The Occidental are picked out of the sand in fields in Scotland. The Oriental is found in the East Indies and Syria.

570. **The Carbuncle** is found only in the East Indies, and is very rare.

571. **The Topaz** comes from Brazil, Saxony, and many parts of Europe.

572. **Cairngorm**, a variety of topaz, is a rock crystal found in veins, in the corries, near the top of a mountain called Ben-a-boura, near Balmoral.

573. **The Emerald** is valued as a gem next to the ruby. It is brought from Pegu, and other parts of the East Indies. When heated, emeralds change into blue, but recover their natural colour on cooling. There are two kinds, Oriental (the finer) and Peruvian.

574. **The Amethyst** comes from India, Ceylon, Brazil, and Peru, in South America.

575. **The Beryl** comes from China, Siberia, the United States, France, and Brazil.

576. **The Onyx** comes from the East Indies, Siberia, Germany, and America.

577. **Cornelians.**—The finest are brought from India, but are found in most countries.

578. **Opal.**—The principal mines are in Hungary, but this gem is found in other parts of Europe, Sumatra, and the East Indies.

579. **The Turquoise** is very common in Persia. This beautiful blue stone is brought into England from Russia, also from a mine at Neshabour, in Persia.

580. **Pearls** are found in the seas about the East Indies, but especially in the Persian Gulf and Ceylon. The richest pearls are found at Ormuz, an island in the Gulf of Persia. They are also found in the river Conway, in Wales, and in parts of Scotland.

581. **The Sardonyx** is a stone very similar to the onyx, and is found in Siberia and the East Indies.

582. **The Chrysoprase** is brought from Silesia, in Germany.

583. **Jacinths**, or hyacinths, are of several kinds. The Oriental are from Calicut and Cambaya, and the Occidental are found in Portugal and Bohemia.

584. **The Chrysolite** of Brazil is of a dusky green colour. There is another kind, called the chrysolite of the jewellers, which is of a gold colour.

585. **Agates.**—The finest come from Germany, where several hundred persons are employed in cutting, sorting, and polishing them.

586. **Jasper** is found in every quarter of the world. The best

kind for ornaments comes from Siberia. There are fine quarries of it in Spain. It is a very hard, variegated stone, with shades of red, green, white, and yellow, in stripes or spots.

587. **Malachite.**—The green copper ore called Malachite, much resembling green jasper, is brought from Russia.

588. **Lapis-lazuli** is a mineral of azure-blue colour, with white
589.] spots. When burnt it is used in the manufacture of ULTRA-MARINE.

590. **Slate** is found in many parts of Wales, particularly Carnarvonshire; also in Westmoreland, Cumberland, and the north of Lancaster.

591. **Salt Mines** in England are in Cheshire, Staffordshire, and Worcestershire. The mines at Northwich, in Cheshire, were first worked in the year 1670. Rock-salt is dug out of mines. The noted one at Wielitska, near Cracow, in Poland, is very beautiful. It has been worked since the year 1251. There are also mountains of salt in Spain and Hindostan, and brine springs from which salt is obtained. In some countries salt is procured from the evapo-
592.] ration of sea-water. The duty upon it (which is now repealed)
593.] was first imposed in 1702. It produces a glaze upon common pottery if thrown into the oven where it is baked. It imparts clearness to glass, hardens soap, and is used in dyeing calicoes and melting metals.

594. **Coal** is a fossil produced from decayed forests, and is found in Northumberland, Durham, Cumberland, Derby, York, Nottingham, Lancaster, Staffordshire, Warwickshire, Shropshire, and Gloucestershire, and in South Wales, Monmouth, Glamorgan, Caermarthen, and Pembroke. It is generally in large masses. Steam or smithy coal contains more carbon than bituminous coal, which is more abundant than any other. Cannel coal (the Lancaster word for candle) is so called from being used in some parts in the place of candles, owing to the brilliant flame it emits. Anthracite coal produces hardly any smoke. Dry or cubical coal is very black and shining.

595. **Black lead** is found in great abundance in Cumberland, and is used by dyers to prevent colours from changing. The produce of the mine at Borrowdale, in Cumberland, is so valuable, that in one hour two thousand pounds worth has been obtained.

596. **Fuller's-earth** is a greenish yellow-coloured clay, much used in woollen manufacture, obtained from Reigate, in Surrey, and Sweden, where it is called stone marrow.

597. **Sulphur** is found in many parts,—Sicily, Italy, Switzerland, and South America. It is a dry substance, of a yellow colour.

598. **Alabaster.**—There are three varieties of alabaster, a species of limestone. The best snow-white is found in Taurus; the yellow in Greece; the variegated in Germany, France, and Derbyshire
599.] and Cumberland, in England. The most celebrated ALABASTER CAVE is that of Antiparos, in the Grecian Archipelago.

600. **Coral.**—Coral is found in the Red Sea between Asia and Africa, and in many parts of the Mediterranean, particularly Tunis, Sardinia, and Marseilles. There are various specimens of coral,—black, red, pink, green, white, and yellow; black and red are the most esteemed. The white coral is found chiefly in Ceylon.

601. **Amber.**—Amber is found on the coast of the Baltic, the Adriatic, and Sicily. There is also an amber mine in Prussia.

602. **Jet.**—Jet is very common at Whitby, in Yorkshire, and parts of Norfolk. It is found in several countries of Europe and the Isles of Skye and Feroe.

603. **Asbestos,** a mineral of fibrous texture, is found in Scotland and the Isle of Anglesea. It is silvery-white. A variety called amianthus was well known to the ancients. Its long silky fibres were manufactured into cloth.

FRUIT.

604. **Oranges** come from many of the islands in the Mediter-
605.] ranean Sea, and from Spain and Portugal. BERGAMOT, a well-known perfume, is made from the rind of the orange.

606. **Lemons** are imported from Spain and Portugal, but are natives of Assyria, in Asia.

607. **Dates.**—The date tree, cultivated chiefly on the African coast of the Mediterranean, has leaves eight or nine feet long, sent to Italy as palms.

608. **Peaches.**—The peach came originally from Persia.

609. **Apricots** came from Asia and Africa. Apricot and apple trees are natives of Persia.

610. **Quinces** came from Epirus in Greece, Armenia, Syria in Asia, and Carthage in Africa.

611. **Cherries** came from Pontus. They were taken to Rome
612.] by the Roman general LUCULLUS, and were first planted in England in the reign of Henry VIII.

613. **Pears** came originally from Africa. The wood of the tree is used for furniture and tools.

614. **Grapes.**—The vineyards in France, and at Romo and
615.] Naples, are very fine. The red Hamburgh GRAPE VINE at Hampton Court has been known to bear 2,200 bunches of grapes.

616. **Pine-apples** were brought from America, in 1690, and are as plentiful at Sierra Leone as blackberries are in England.

617. **Medlars.**—This fruit is a native of Cheshire.

618. **Cranberries** are grown in Lincolnshire, Cumberland, and Cambridgeshire. A larger kind, but not with so full a flavour, is imported from Russia; another kind from North America.

619. **Pomegranates** are natives of Africa. The rind is used for tanning morocco leather.

620. **Tamarinds** come from the East and West Indies.

621. **Plums.**—The egg plum, greengage, and other kinds, all
622.] originally came from the wild plum. GREENGAGES were brought from France by a family of the name of Gage.

623. **Prunes** are French plums dried. They are exported principally from Brignolles, near Marseilles, and from Bourdeaux.

624. **Currants.**—The currant tree is a native of Great Britain. Grocers' currants were brought into England from Zante in 1533.

625. **Raisins** are very ripe grapes prepared by drying in the sun. They are chiefly brought from Spain. The finest jar raisins come from Damascus.

626. **Olives** come from France, Spain, and Italy. They contain
627.] a large quantity of oil, called SWEET OIL, olive oil, or Florence oil.

628. **Figs** come from Turkey, Italy, and Spain. The wood of the tree is much valued in the East. The fruit of the fig tree always appears before the leaves; and in some climates one tree will produce three crops of fruit in the year.

629. **Citrons.**—The citron is a larger sort of lemon.

630. **Melons**, a species of cucumber, originally from Armenia, attain the highest state of perfection in hot climates. The water-melon is particularly good in Egypt, China, and the East Indies.

631. **Gooseberries** were brought from Flanders about 1547.

632. **Raspberries.**—This fruit is a native of Mount Ida in Greece.

633. **Strawberries**, originally brought from Bohemia. The strawberry season in France lasts nearly four months.

634. **Cocoa-nuts** hang in clusters from the leaves at the top of the palm tree, fifty feet high. The nut yields oil and milk. Sails, cordage, and cloth are made from the fibrous substance of the nut.

635. **Almonds** grow in Germany, France, Spain, and Barbary. Oil is extracted from almonds.

TREES.

636. **Oak.**—Two species of the oak grow in England. OAK-GALLS, which produce a good black dye, used for making ink, are caused by the bite of an insect. The bark is used for TANNING. The oak is used for shipbuilding, as many as 3,000 trees being required for a large ship. There is an extremely old and quite hollow oak still standing at ALONVILLE, in Normandy. Within the trunk a chapel has been formed, neatly paved, and it is entered by a flight of steps. Tradition informs us that Wickliff (born 1324) preached under the boughs of the aged oak at Addlestone, on the boundary of old Windsor forest.

WICKLIFF'S OAK.

642. **Elm.**—This tree ranks next to the oak for size and beauty, and is also much used for shipbuilding; and as the wood is not liable to warp, it is used for carving, for picture-frames, water-mills, and pumps. There is a hollow elm at Crawley, in Sussex, forming a room about twelve feet wide An elm tree was cut down at Chelsea, in 1745, 13 feet in circumference and 110 feet in height, said to have been planted by queen Elizabeth.

645. **Beech.**—The oldest beech tree in England stands at Sunning Hill. The French peasants make shoes of the wood. Bedsteads and chairs are made of it in England. In Denmark and Switzerland the leaves are used for stuffing mattresses. The bark is used for fishing-nets and floats.

646. **Walnut.**—The walnut tree is from Turkey. The wood is beautiful for cabinet work. Oil is extracted from the fruit.

647. **Chestnut.**—White blossom in Europe, a brilliant scarlet in

South America. The horse-chestnut was brought from Asia 600
648.] years ago. The largest tree in Europe is one on Mount Etna.

649. Sweet Chestnut, or Spanish Chestnut, from Spain, is not of the same tribe as the horse-chestnut.

650. Poplar.—The "white," "grey," "black," and "aspen," are
651.] all natives of England, and are common in Syria, Turkey, Tartary, and America. The gum from the bark is used in medicine.

652. Fir.—There are many different species of the pine tree. All pines bear cones. The Scotch fir grows in England, the Highlands of Scotland, Norway, and Denmark. The swamp pine supplies
653.] us with TAR and TURPENTINE. There is also the stone pine, the cluster pine, the Norway spruce fir, and the Canadian balsam fir. The wood is called deal, and is used extensively for almost all
654.] purposes. Turpentine, an oily, resinous juice, is obtained from the pine or fir, as well as a volatile oil; RESIN and TAR from the
655.] roots,—the tar, when boiled, producing PITCH. The Chili pine is one of the most beautiful; the cones are as large as a man's head; each contains two or three hundred kernels, the size of an
656.] almond. Pitch mixed with resin and oil makes SHOEMAKER'S
656*] WAX; with whale fat, it makes CARRIAGE GREASE.

657. Cedar.—There are very few cedar trees remaining at the
658.] present time. Lebanon, in Syria, is famous for cedars. The cedar is as large as the oak, its leaves grow in beautiful tufts, and the fruit is a cone, of the same class as the fir. The East Indian cedar grows 150 feet high, and is very durable.

659. Alder.—The wood of the alder when wet becomes very hard; it is used for water-pipes, sluices, and handles of brushes.

660. Birch.—There are four species of birch; one called the paper birch has a bark which may be made into paper. The wood is used for wheels of carriages, ox-yokes, broom handles, hoops,
661.] wooden shoes, and canoes. The Laplander covers his hut with the bark, and uses the oil from the trunk for his lamp, and the sap for a refreshing drink.

662. Willow.—There are many species of willow. The weeping
663.] willow flourishes in the Levant and in Persia. The poet Pope
664.] planted the first weeping willow in England, in his garden at Twickenham. The common willow grows in marshy places and on high hills. It is sometimes called mountain osier. The wood is
665.] converted into drawing-crayons, and charcoal for making
665*] gunpowder. Leather is made of the bark. The bark of the
666] white willow is used for tanning and dyeing.

667. Holly.—The holly is the whitest of all woods, and will take
668.] a fine polish. BIRDLIME is prepared from the bark.

669. Larch.—The larch is a native of the Alps and Apennines. It is cultivated in England, Germany, and Russia. The wood is much used by the Russians for shipbuilding, and by the Italians for picture-frames. It is of so bitter a taste that no insect will
670.] take up its abode in it. VENICE TURPENTINE is extracted from it.

671. Ash.—The ash is much used for carriage-building, axle-trees, harrows, ploughs, boatmen's oars, and hop-poles. The ancients made use of the inner bark for writing upon. It is very
672.] durable. A useful powder is made from the rotten wood. The bark is used in tanning calfskin, and in dyeing. The manna
673.] ash is found in Italy, the sap flows from the tree like water; it hardens in the sun, and is then called "MANNA." The rounded
674.] spots of white powdery substance found upon the trunk of the ash are intensely bitter to the taste, and produce OXALIC ACID.

675. Lime.—The wood of the lime or linden tree is very white and hard, and much used by turners and carvers. The flowers
676.] are a favourite food of bees. It flourishes in Europe and Asia. In Brazil there is a species called shoe-wood, of which clogs are
677.] made by the Portuguese. Boats are built of it at Madras;
678.] cord, sacking, and Russian mats are made from the bark.

679. Yew.—The yew tree lives to a great age. The old English
680.] bows and arrows were made of its wood, now used by cabinet-
681.] makers. The berries are bright red and very poisonous.

682. Teak.—The teak tree is called the "oak of the Eastern world," and is much used in India for shipbuilding; it is a native of Pegu, and is very abundant at Bengal and Calcutta.

683. Maple.—The sugar maple of North America yields a great
684.] deal of sugar. When tapped, the sap flows out, varying in quantity from a pint to a gallon a day, for about a month. It is a
685.] light wood, and used for violins.

686. Sycamore.—This tree is of the same class as the maple. It flourishes near the sea. The wood is very durable. In Egypt
687.] this tree is always green, and the fruit is eaten as figs.

688. Cypress.—Named from the island of Cyprus in the Mediterranean, of the fir tribe, is a pale red-coloured wood, with deep veins. It takes a high polish, and is very durable. The doors
689.] of the temple of Diana at Ephesus are said to have been made
690.] of cypress wood, and the gopher wood of which Noah built

the ark is supposed to have been the cypress. The Mexican cypress has a peculiar stem, twisted like a corkscrew.

691. Bread fruit.—This tree grows to a large size. The fruit is a pale green, and hangs on the boughs like apples, each being the size of a melon. When boiled it is soft, and may be compared to a baked potato in taste, and when baked to that of a 692.] sponge biscuit. It is of great value as food to the South Sea Islander, who with its timber builds his hut. The inner bark 693.] makes a kind of cloth, and the juice is used for glue.

694. Butter Tree.—The butter tree, or micadania, is found in the interior of Africa, and is like our oak, yielding a kind of vegetable marrow; an oily substance is found in the nut, which, when placed in hot water, can soon be skimmed off for use.

695. Cow Tree.—This curious tree grows in Columbia, high up the mountains. Its branches appear dry and dead. Yet when the trunk is pierced, a sweet and nourishing milk, of a balmy smell, flows out. It is most abundant at sunrise.

696. Banian.—The banian, or Indian fig tree, is the pride of Hindostan. The fruit is about the size of a cherry, of a bright scarlet colour; the leaves a bright light green; the branches hang down till they reach the ground, and then take root; thus at length a single tree becomes a wood. The most beautiful specimen of this kind is in Ceylon. A small banian tree is to be seen at Kew.

697. Gutta-percha.—This is a magnificent tree, 60 or 70 feet high, and is found at Singapore, and in the island of Borneo; the leaves are pale green; the gum or gutta may be dissolved in chloroform, ether, naphtha, or oil of turpentine. Introduced into England in 1844, by Dr. Montgomery.

698. Cork Tree.—The cork tree grows chiefly in Italy, Spain, and Portugal. Cork is the layer under the outer bark. It was much prized as long ago as A.D. 79. Spanish black, which is much used by printers, is burnt cork. The tree is of the oak tribe, and bears acorns. It is barked for the first time when 15 years of age. This time the bark is only fit for tanning. The second barking takes place when a tree is 25 years of age, and once again in ten years, or at the age of 35. The cork is then said to be really good, and continues to improve until the tree is two or three hundred years old, the same process being repeated every ten years.

699. Ebony is brought from the West Indies, and is very hard, heavy, and black. It takes a very fine polish, and is used in mosaic work. It is remarkable that the black wood is found only

in the centre of the tree, the outside being very soft and white. 700.] In Spain the walls of houses are sometimes lined with cork.

701. Mahogany is a native of America, and grows in the islands of Cuba, Jamaica, and Hispaniola. It often grows to the height of 100 feet. The foliage is a deep green. Worms and insects never infest it, and water will not rot it.

702. Rosewood grows in the Brazils (where it is called the jacaranda tree), and in the island of Jamaica.

703. Sandal-wood is a West Indian tree, of which there are several species. The red sandal is a very hard wood. The juice or 704.] gum of one kind of sandal-wood tree is called DRAGON'S BLOOD. Satin-wood grows in the Brazils and the island of Jamaica.

705. Date Palm.—Palms growing in Egypt, Barbary, and Arabia, are very varied and numerous. The leaves generally grow at the top. The dwarf palm, as its name implies, is very small. The date palm rises 50 or 60 feet before throwing out its leaves. The stalk of each leaf is ten or twelve feet long. Three clusters of flowers are found on each tree, each containing 12,000 flowers. The tree is in its prime from 30 to 100 years old. It then begins to decline, and dies when 200 years old. Groves of the 706.] date palm are found at the foot of the Atlas mountains. Pomegranates, oranges, lemons, and other fruits flourish beneath their delightful shade. The Medina date is quite green, even when ripe, while another kind is yellow. The kernel of the date-stone, when, ground, forms a nutritious food for cows, sheep, and camels. They are sometimes polished and made into necklaces. The leaves are made by the Arabs into mats and baskets, and used for covering the roofs of their dwellings. Ropes are made from the fibres, and 707.] the juice of the tree, when fermented, is made into "areka," a spirituous liquor.

708. Cocoa-nut Palm. (Also 713—15).—The name is taken from *macaco*, Portuguese for monkey, from three black marks (supposed to resemble a monkey's face) found on the shell of the nut. The whole Brazilian coast is thick with these trees. It is found near water in all tropical parts of the world. Spoons, cups, and bowls are made from the shell. The buds are eaten as a vegetable. Sugar is obtained from the sap. The tree blossoms afresh every six weeks; thus a single tree has produced five hundred nuts in one year. Each nut is the size of a *large* melon. The flowers are perfectly white and smooth. *Two* of these grow above *each* cluster 709.] of fruit. "ARRACK" is distilled from the fermented juice of

710.] this tree. The unfermented juice is called "Toddy;" the sugar,
711.] "Jaggheby." The root is esteemed a valuable medicine. Por-
tions of the leaves are made into lanterns, needles, and pens. A kind
of sago is contained in part of the stem. The "jagghery" mixed
712.] with lime makes a good cement. A hard-coated black-beetle
sometimes eats its way into the centre of the tree, seriously
injuring young plants. The double cocoa-nut trees grow in the
Seychelle Islands. This is a very valuable tree, and at one time
713.] the nuts were so rare as to be sold for £150 each. Some of
714.] the leaves are thirty feet along, and are so strong and firmly
attached to the trunk that a man may be seated on one in perfect
safety. In a storm the noise these immense leaves make by
clashing against one another is quite fearful. The king cocoa-nut,
found only in Ceylon, is of a bright orange colour. The nuts are
planted when ripe, and appear above the ground in three months.
715.] 600,000 cocoa-nuts are annually imported into England.

716. Talipat Palm.—The talipât or *umbrella* palm is a native of
Ceylon. It is one of the most beautiful of the palm tribe, but
not nearly so useful as the cocoa-nut or date palm. The leaves
717.] are of great size. A single one will cover nearly twenty men.
718.] Cut into strips, the Cingalese use the leaves for writing upon.
They must first be prepared by soaking in boiling milk and water.
The wood has an odour something like cinnamon. It is a reddish
719.] colour. The talipat blossoms only once during its life. The
blossoms burst with a loud report, and a large plume of the most
beautiful bright scarlet flowers springs out. They rapidly unfold
their leaves, and when, after a short time, these fall off, a cluster
of fruit comes in the place of the flower, and in three weeks the
fruit ripens, the tree decays, and lies rotten on the ground.

720. Fan Palm is a species allied to the talipât, and a native of
721.] South America. The pith yields an abundance of Sago.

722. Betel Palm.—The betel palm is a native of the East Indies,
723.] and the nuts are used for dyeing cotton cloth.

724. Oil Palm, from Africa, grows 30 feet high. The fruit has
the smell of a violet, and is of a rich yellow, of the size of an egg.
725.] The Oil from the pulp of the fruit is much used in England
in the manufacture of soap and candles. The natives eat it as
butter.

726. Cabbage Palm, a native of South America, with slender
stem, grows to the height of 190 feet. The leaves, boiled, eat like
727.] cabbage. The wood when buried becomes as hard as iron.

728. **Wax Palm**, also a native of South America, grows 180 feet high, and has leaves 20 feet long. Wax is found between the leaves, and is made into candles.

729. **Vegetable Ivory Palm.**—This species is also found in America. The nuts contain a clear liquid which gradually thickens until it becomes hard and white as ivory.

730. **The True Sago Palm.**—This tree grows in Asia. The
730*] sago, which is made into bread in Eastern countries, is found in the heart of the tree. When young the tree is covered with thorns, which protect it from the attacks of wild animals.

731. **Palmyra Palm.**—It is a native of Asia. Fruit very sweet
732.] when quite young. Quantities of SUGAR are made from the
733.] sap, from which ARRACK is distilled. Leaves used for writing.

734. **Burning Palm** yields sugar and a kind of wine.

735. **Dourn Palm**, a native of Egypt, is sometimes called the gingerbread palm, on account of the soft rind of the fruit, which in colour and taste resembles gingerbread.

736. **Broom Palm.**—This kind is found in Brazil. The fibres of the leafstalks are made into brooms, mats, and cordage. The shell of the nuts is very thick and hard, and, being capable of taking
737.] a high polish, is much used for umbrella handles, bell-pulls, &c.

738. **Locust Tree** is a native of South America, and lives to a
739.] great age, varying from two to four thousand years. The trunk is of an enormous size. The tree is of rapid growth.

740. **Tallow Tree.**—The tallow tree is a native of China. The bright red berries contain a tallow, which when made into candles
741.] and lighted burns brilliantly without smoke.

742. **Acacia**, from America, called the locust tree, and believed to be the shittah tree spoken of in the Bible, yields a gum.

743. **Ferns.**—The Alpine Shield fern grows only on mountains;
744.] the Marine Spleenwort is found on the wildest parts of the
745.] sea coast; the beautiful Maiden-hair fern grows on rocks. The writer lately had in her possession a most lovely fern, raised from the seeds of a Maiden-hair fern; it resembled a *double* oak-leaf in form, and grew to the height of three feet.

746. **Lichens.**—A species of moss or lichen, known as Cudbear,
746*] yields a purple dye. It grows abundantly on the limestones of Derbyshire, and on the rocks in the north of Scotland; the Archil, another lichen, yields a more brilliant dye than the Cudbear; the lichen called Tripe de Roche is the food of the Canadian hunter when deprived of other resources; the Iceland Moss is of

British growth, and is used as a medicine; the Reindeer lichen is also British, and is the only food of the reindeer during the long northern winter; the Old Man's Beard is so named from its remarkable appearance, drooping from the branches of the trees.

PRODUCE OF SHRUBS, PLANTS, BERRIES, &c.

746*a*. **Tea**, the leaf of a shrub, has a blossom similar to the common dog-rose, and is a native of Asia. The finest tea shrubs 746*b*] grow in Japan, on one particular mountain. Tea was brought into Europe by a Dutch merchant in 1610.

747. **Coffee**, the berry of a plant, is a native of Arabia. It is extensively cultivated in India, Java, and Brazil. The shrub is about 15 feet high. The branches bend downwards. It bears a white flower resembling the jasmine; enclosed in the berry (which is red) are two hard oval seeds. Mocha coffee is considered the best.

748. **Sugar**, brought from the West Indies, Brazil, Java, Bengal, the Mauritius, and Siam; may be obtained from many vegetable substances, but the chief source is the sugar-cane. In ten months from the time the canes are planted they are ripe; they are then cut down and carried to a mill, where they are crushed under heavy rollers. The juice when pressed out is simmered with wood ashes and lime. It is allowed to cool, and when the coarse remains of the syrup, called molasses, are drained away, the raw sugar is barrelled for exportation to England. The art of sugar 749.] refining was first practised in England in 1659.

750. **Chocolate.**—Chocolate is prepared from the roasted cocoa-nut, reduced to powder, and mixed with water into a paste.

751. **Nutmeg**, from the Molucca Islands, resembles an apple, and is gathered three times a year. When opened, the nutmeg is 752.] seen under a network of scarlet MACE, which exposed to the sun becomes yellow.

753. **Clove** also a native of the Molucca Islands, is largely cultivated in America. The flowers are small, and grow in clusters at the end of the branches. The cloves in use in this country are the flowers gathered before they have opened, and while green smoked by a wood fire, and dried in the sun.

754. **Allspice**, or Pimento trees, are grown largely in Jamaica.

755. **Cinnamon.**—The cinnamon tree flourishes in Ceylon, and thrives best in a poor soil and damp atmosphere. It is about the size of an apple tree. The leaf is a light green; the flower is white.

756. **Ginger.**—The ginger plant is a native of the East Indies,

but is cultivated in the West Indies. The flowers are red. The root, which is the ginger, is dug up when the leaves fade. That for preserving is taken up before it is ripe. It is then scalded till quite tender, and is covered with a thin syrup.

757. Pepper is brought from the East Indies, and is a creeping plant, growing in clusters similar to currants. It is first green, but when ripe turns red; and when dried, black. The white pepper is dried after being soaked in sea water, which causes the
758.] skin to shrivel, and leaves the berry white. CAYENNE PEPPER is the fruit of the capsicum ground to powder.

FLOWERS.

759. Plants.—Indications of time and weather are afforded by
761.] many of our flowering plants. The purple sandwort closes
762.] before a coming shower. The corollas of the speedwell are securely shut at the approach of rain, and as surely open when the
763.] rain ceases. The tiny flowers of the pimpernel, or poor man's weather-glass, close many hours before rain, also always at twelve,
764.] expanding at seven the next morning. The goat's-beard has obtained the name of "John go to bed at noon," on account of its
765.] early closing. The flowers of the *red* campion open in the
766.] morning, while those of the *white* campion expand at night.
767.] The white ox-eye closes its flowers before a coming storm.
768.] The foxglove contains a deadly poison, which, scientifically
769.] treated, becomes a valuable medicine. The monkshood, or aconite (the roots of which much resemble the horseradish), contains the most deadly poison known.

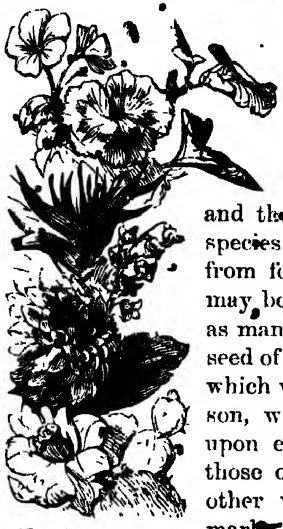
769*a*. Hyacinth.—There are two species of hyacinth (*sport*) besides the woodland blue bell, or wild hyacinth. The Eastern hyacinth is very abundant in Palestine. The roots of the blue bell
769*b*.] contain a great quantity of starch. It is indeed a beautiful sight in April and May to see the woods covered with a carpet of blue hyacinths. The Russian wild hyacinth is yellow.

769*c*. Stocks.—The language of the stock is "*promptness*" and "*beauty*." The Virginian stock is a native of the Mediterranean isles, others are natives of Germany and Russia.

769*d*. Solomon's Seal.—The root of the flower called Solomon's seal (*cure for heartache*) is known by the name of "whitewort." The
769*e*.] juice of the leaves prepared with lime yields a beautiful dye.

770. Tiger-flower.—The tiger-flower (*be prudent*) is a native of Mexico; the blossoms are both yellow and scarlet.

771. Geranium.—The following are some of the varieties of the geranium. Each one has a language of its own. The scarlet is the most common (*comforting*); the dark is *melancholy*; the horseshoe leaf, *facility*; the oak-leaved, *true friendship*; the rose-scented, *preference*; the silver-leaved, *recall*; the pencilled, *ingenuity*; the nutmeg, *expected meeting*; the lemon, *unexpected meeting*; the ivy, *bridal favour*; and the wild geranium, *steadfastness*. Several species are natives of Great Britain, many are from foreign lands, and beautiful fancy kinds may be raised from seed. The writer has had as many as *seven varieties* raised from the [772. seed of one plant, a fancy pink and white; one of which was double, the colour a deep rich crimson, with black and white alternate marks upon each petal. The leaves much resembled those of the "cloth of gold" geranium. Another was a beautiful pale pink, with white marks on the petals; while a third was pure white, with a deep rose colour in the centre.



GERANIUM, SWEET-WILLIAM, HYACINTH, DAHLIA, PRICKLY PEAR

773. Sweet-William.—The Sweet-William (*gallantry*) is of the pink family, and is called by the French "the nosegay of pinks."

774. Dahlias.—The dahlia (*instability*) received its name from Dahl, a Swedish botanist, and is a native of Mexico. There are said to be upwards of a thousand varieties.

777. Cactus.—There are eight hundred species of the "*cacti*," or "*prickly pear*" tribe. The cactus (*warmth*) is a native of America. 778.] It flourishes in Mexico and Chili. The "night-flowering cereus" is considered the most splendid of the cactuses. The blossoms expand at six o'clock in the evening, and fade by four the next morning. The perfume is very rich. The outer petals are dark brown, the inner bright yellow, softened off to the purest white. The "nopal" cactus contains a bright red juice, which is 779.] the food of an insect called the cochineal. *Lac*, used in making 780.] sealing-wax, is the produce of this little insect. The Indian fig, a native of America, and a variety of this tribe, grows to the height of three feet. The blossom is a beautiful bright red. The stalk is full of juice, and has been called the "spring of the desert." Though it thrives without rain, the supply of juice is abundant.

781. **The Rose.**—There are many varieties of the rose, the queen of flowers, some of which, with what is termed the language of
782.] flowers, are as follow:—THE CABBAGE ROSE (*ambassador of love*).
783.] THE MAIDEN BLUSH (*if you love me you will find it out*).
784, 785.] THE DAMASK (*brilliant complexion*). THE MOSS (*confession of love*); this, in a very warm climate, loses the moss.
786, 787.] THE YELLOW (*jealousy*). THE PROVENCE (*pride*).
788.] THE CHINA MONTHLY ROSE (*beauty always new*); and the
789.] WHITE (*I am worthy of you*). THE MUSK ROSE (*capricious*
790, 791.] *beauty*) is found wild in some parts of Africa. THE FRENCH ROSE (*charming*) is found wild in France and Austria.
792.] THE YORK AND LANCASTER (*war*) is a variety of the French
793.] rose; the leaves are variegated, red and white. THE DAMASK ROSE grows wild in Syria. The rose is found in great abundance
794.] in the Holy Land. THE BENGAL, OR GHAZIPORE ROSE, from which the otto of roses is made, is grown in a district known as the rose bed,—as far as the eye can reach the plain is covered with bright flowers, and the effect, we are told, is perfectly dazzling.
795, 796.] THE GUELDER ROSE (*age*) is pure white. THE WILD
797.] DOG-ROSE (*pleasure and pain*) is found in our hedges. THE
798.] CHRISTMAS ROSE (*tranquillize my anxiety*). THE UNIQUE (*call*
799.] *me not beautiful*). THE MONTIFLORA (*grace*).

800. **Tulip.**—The tulip (*hopeless love*) is a native of the Levant, and was brought to England about the year 1577. There are several hundred species of tulips. It grows wild in the Levant, Syria, Constantinople, and Palestine.

801. **Fuchsia.**—The scarlet fuschia (*taste*) derives its name from the famous German botanist, Leonard Fuchs, and was the earliest introduced into England, about the year 1788.

802. **Carnation.**—The carnation (*alas for my poor heart!*) of which there are more than 400 varieties, is a native of Italy.

803. **Pinks.**—The pink (*boldness*), also from Italy, has many
804.] varieties, one of which is found on the mountains of Germany and Switzerland. The language of the double Indian pink is
805.] "*always lovely;*" that of the single, "*aversion;*" the [805*,
806, 807.] variegated, "*refusal;*" the white, "*talent;*" the red.
808.] "*pure love;*" the mountain pink, "*aspiring.*" The crimson
809.] clove (*dignity*) is also a species of pink.

810. **Arum** (*zeal*) blossoms in April and May. The white, or horn arum, is found wild at the Cape of Good Hope.

811. **Verbena** (*family union*) is a native of South America.

812. **Wall-flower** (*fidelity in adversity*), is a native of France and Spain. The botanic name signifies "*hand-flower.*"

813. **Violets.**—The sweet blue violet (*faithfulness*) has a delicious scent. There are the dog's-tooth (*watchfulness*), the white (*modesty*), and purple (*rural happiness*). Very abundant in Canada.

814. **Heart's-ease** (*thoughts*) is a native of Siberia; blue, white, and yellow are found in Lapland.

815. **Snowdrop.**—The pure white (*hope*) is the harbinger of spring. In Germany it is called "snowbell," from the idea that it is ringing its bell to call the other spring flowers into blossom.

816. **Polyanthus.**—Another early spring flower (*pride of riches*).

817. **Ranunculus.**—The language of the garden ranunculus is 818.] "*you are rich in attractions,*" while that of the wild ranunculus is "*ingratitude.*" There are nearly a thousand varieties.

819. **Narcissus.**—The narcissus (*egotism*) grows wild in Kent and Norfolk. It is also found in Holland in great abundance.

820. **Crocus.**—One of the first spring flowers (*youthful gladness*), is a native of Switzerland and Italy. It was introduced into England in the time of queen Elizabeth.

821. **Petunia.**—The petunia (*your presence soothes me*) was brought to England from Buenos Ayres in 1830.

822. **Nasturtium.**—From Peru (*patriotism*), is so named from "*tropœum,*" a trophy, on account of its helmet-like shape.

823. **Mignonette** (*your qualities surpass your charms*) is a native of Egypt. Its French name "*mignonne*" signifies *little* 824.] *darling.* It was brought to England in 1752.

825. **Musk** (*weakness*) is a native of America, and was brought to England in 1759.

826. **Larkspur** (*fickleness and haughtiness*) is a native of Switzerland. The common blue larkspur (*levity*) grows wild in most 827.] parts of Europe, but especially in the fields near Cambridge.

828. **Marigolds** (*grief*) are all natives of America. The African marigold (*despair*) was brought to England about 1573. Marigolds are found in abundance in India, China, and Japan.

829. **Lupine** (*voraciousness*) is one of the oldest annuals of our English garden. The blue is a native of the south of Europe; the yellow of Sicily, where it grows wild; and the white is much cultivated in the Levant, where it is called fig-bean.

830. **London-pride.**—London-pride, or "None so pretty" (*frivolity*), in Ireland is called "St. Patrick's cabbage, and Queen Anne's needlework."

831. **Lychnis.**—The scarlet lychnis (*wit and sunbeaming eyes*) is a native of Asia. It was brought to England from Russia in 1596. The WHITE LYCHNIS is much cultivated in Holland, the RED CHINESE LYCHNIS in China and Japan, and the splendid lychnis in Siberia. "RAGGED ROBIN" (*wit*) and "BACHELOR'S BUTTONS" (*celibacy*) are also of the same species.

832. **Sweet-peas.**—The pink and white sweat pea (*departure*) is a native of Sicily. It grows wild in Ceylon. The Everlasting Pea is from Provence (*an appointed meeting and lasting pleasure*). The Tangier Pea is a native of Barbary.

833. **Daffodil** (*regard*) from south of France, and the Pyrenees.

834. **Forget-me-not.**—This sweet little blue favourite (*true love*), with its long narrow-shaped dark green leaves, is extensively 835.] cultivated in France. The name is said to be derived from the fact that a lady on the eve of marriage, walking with her intended husband on the banks of the Danube, expressed a wish to possess some of the little blue flowers she observed near the stream. The gentleman, in attempting to reach some, fell into the water; as he sank for the last time he threw a root of the flowers at the feet of his affianced bride, exclaiming as he did so, "Forget me not."

836. **Evening Primrose** (*inconstancy*) often called "The Evening star," is a native of America, and is common throughout England.

837. **Honeysuckle.**—The Italian honeysuckle (*love sweet and secret*) is from Italy. There are many varieties, as the coral (*colour of my fate*), the French (*rustic beauty*), the red (*generous and devoted affection*).

838. **Foxglove** (*insincerity*) is a native of Italy. The Madeira has large orange-coloured blossoms, in the shape of a bell, and grows to the height of nine or ten feet.

839. **Hollyhock** (*ambition*) is from China. It yields a fine blue colour, and in 1821 nearly three hundred acres of land were planted with it, with the view of using the fibres for thread.

840. **Iris.**—There are many varieties of iris (*message*), some of which are natives of Persia, China, the Levant, Africa, and America. The roots are eaten as food by the Hottentots.

841. **Jonquil.**—The jonquil (*I desire a return of affection*) is a variety of narcissus.

842. **Columbine.**—The blue columbine (*anxious and trembling, but resolved to win*) is called by country people "blue starry." The Alpine and Canadian varieties are red.

843. Convolvulus.—The convolvulus (*bonds*), a very beautiful but frail flower never lasting more than a few hours, is a native of America. It is very luxuriant in its native woods, where it is called "bush-boom," on account of its entwining itself around the trees. It grows very tall in Jamaica. The Italian convolvulus (*repose*) opens only at night.

844. Monkshood (*a deadly foe is near*) was formerly called purple helmet-flower. The leaves are very fatal to many animals, and the juice of the leaves occasions death in a very short time.

845. The Wolfsbane (a variety of monkshood) grows on the Swiss mountains, and in parts of Europe and North America.

846. Aloes.—The American aloe (*grief*) blossoms only once in the long period of a hundred years, when, with a loud report, it suddenly throws up a stem from twenty to twenty-four feet in height. The leaves are huge, sword-shaped, and fleshy, weighing twelve pounds each. Paper, rope, and twine are made from the fibre of the aloe, and soap from the oily juice.

847. China-aster.—The China-aster (*afterthought*) is a native of China, where it is much larger than in England.

848. Lilies (*purity of heart*) are of many varieties. There are three water-lilies, the white (the queen of water-lilies), the yellow, and a new species from British Guinea known as The Royal Water-lily. It is large and flat, the rim of each leaf green, with bright crimson

THE WATER LILY.

849.] in the centre; and it has a most delicious smell. The Victoria
water-lily was first reared in England in 1849, at Chatsworth, the
850.] seat of the duke of Devonshire. The Gigantic Lily, a native
of Australia, grows to the height of fifteen feet; the flower
851.] is a rich deep crimson, as is also that of the Tharatah, an-
other Australian specimen. The leaves of this plant are a most
852.] lovely green, and the blossoms quite a vivid colour. The
853.] Lily of the Valley (*return of happiness*); the Superb
854, 854*.] Lily (*majesty*); the Tiger Lily (*gaiety*); the Turk's
855.] Cap (*for once may pride befriend me*); the Common White

856.] LILY (*purity, or sweetness*); and THE GUERNSEY (*unconscious sweetness*), are the principal. Comes to us from the Levant.

863. **Anemone.**—The anemone, or wind-flower (*expectation*), comes from the Levant and Syria, where the fields are bright with its white, red, and blue flowers. It is much prized in Persia.

864. **Rose Campion.**—The rose campion (*only deserve my love*) is a variety of lychnis. THE BLADDER CAMPION is very common in several of the Mediterranean islands.

865. **Campanula** (*aspiring*).—The tribe contains nearly fifty varieties, some are natives of Europe, and others of Asia. The 866.] CANTERBURY BELL (*acknowledgment*) is a native of Germany.

867. **Syringa** (*memory*), or mock orange, is a native of the Himalaya mountains.

868. **Candytuft** (*indifference*) from Spain. Some from the shores of the Mediterranean, and others on the rocks of Gibraltar.

869. **Auricula.**—The auricula (*avarice*), a native of Switzerland, is known as the French or mountain cowslip, and blooms in the Alpine regions of Italy, Switzerland, and Germany.

870. **Balsam.**—The balsam (*touch me not, impatient resolves*), a native of the East Indies, grows wild in India, China, and Japan.

871. **Chrysanthemum** (*I love truth*) has many varieties, and is much cultivated by the Chinese and Japanese.

872. **Lobelia** (*malevolence*), a pretty little blue flower, comes from Virginia, Mexico, the Cape of Good Hope, and many of the West Indian islands. A species, white and beautiful, from Chili, yields a deadly poison, and even its presence is indicative of an unhealthy atmosphere. Tobacco is made by the Indians from another species of the lobelia.

875. **Saxifrage** (*elevation*).—Nearly all the sixty species are natives of Siberia, Switzerland, or Italy, and are found wild on the Alpine mountains.

876. **Venus's Looking-glass** derives its name from its resembling a mirror, the astronomical sign of Venus. The language is "*flattery.*" Venus's trap, "*deceit,*" and Venus's car, "*fly with me.*"

877. **Lilac,** a native of Persia, common in Hungary and Barbary, was brought to England in time of Henry VIII. There are three sorts of lilac,—the white (*youthful innocence*), the purple (*first emotions of love*), and the field (*humility*).

878. **May.**—We feel that spring has indeed come when we see the hedges full of the sweet-scented white May (*deceitful charms*). It is found as a shrub in America. The pink May is derived from

the wild varieties of hawthorn (*hope*). The bark yields a yellow dye; if mixed with copperas, deep black. The hawthorn was the badge of the royal house of Tudor.

881. Rhododendron (*danger*), one of the most beautiful shrubs of the garden, a native of Asia. There are three kinds, the crimson, white, and lilac. The Nepaul rhododendron, in Asia and America, grows twenty feet high, with large bunches of flowers, so full of honey that when the tree is shaken it falls to the ground in showers.

883. Calceolarias (*I offer you pecuniary assistance*) are natives of South America. They grow in the richest profusion in Chili and on the mountains of Peru.

884. Michaelmas Daisy, a pretty flower of autumn (*afterthought*), is a native of Virginia.

885. Sunflower.—The sunflower (*adoration*) is from Peru and Mexico. It grows to a great height in Canada. It is cultivated in the United States for the sake of the oil contained in the seeds.

887. Hydrangea (*a boaster*) is a native of China.

888. Salvia (*energy*), a native of Peru, is a species of sage.

889. Prince's Feather (*hopeless, not heartless*).—The prince's feather is a native of the East Indies.

890. Jasmine.—There are many varieties of jasmine (*amiability*). The Arabian blooms only at night.

891. Clematis.—The evergreen clematis (*poverty*) is a native of Spain, the common (*mental beauty*) of Japan. It was introduced into England by Ker, the botanical collector, from China.

892. Peony.—The common peony (*bashfulness*) grows wild in China and Siberia. The tree peony has been cultivated in China 1,400 years. A very beautiful variety grows on Mount Ida.

893. Passion-flower.—The passion-flower (*restoration*) is a wild flower from the American woods, where it climbs to the top boughs of the highest trees.

894. Myrtle.—The myrtle (*love*) comes to us from Italy and the south of France. It is obtained from the Dutch myrtle, from which candles are made, and it yields a dark blue dye.

897. Azalea (*temperance*).—Azaleas are natives of S. America.

898. The language of the DAISY is *innocence*, the COWSLIP [899. 900.] *winning grace*, and the BUTTERCUP *childishness*. The root, stem, leaves, and flowers of the buttercup are all poisonous.

901. Grasses.—The family of grasses consists of from three to four thousand species, 150 of which are natives of Great Britain.

BIRDS.

904. **The Eagle and Hawk.**—Nests of birds vary very much in their construction. While some are wonderfully neat and compact, others are nothing more than a few sticks rudely put together. Thus it is with the Eagle. The nest, a huge mass of sticks, is mostly to be found upon the rocky ledge, half way down a precipice. Sometimes it may be found in a shattered forest trunk, in a very desolate spot. The Eagle has two, sometimes three, eggs, of a dull white, marbled with a rusty hue.

THE GOLDEN EAGLE.

905.] The GOLDEN EAGLE, the White-tailed and the 906.] Spotted, are all met with in Britain. The GOSHAWK, found only in Scotland and Orkney, has its nest in a high tree, with 907.] three or four eggs of a pale blue colour. The SPARROWHAWK never builds a nest for itself, but lays four or five pale blue and spotted eggs in a deserted crow's nest.

908. **Owls.**—There are many kinds of British Owls. Eggs white.

909. **The Starling** builds in various situations, and has blue eggs.

910. **The Chough** nests in cavities of cliffs, or in old ruins.

911. **The Raven** builds its nest in trees, and sometimes in ruins.

912. **Rooks** always build in company; the same nest is used year after year. They lay four or five greenish eggs, with brown spots.

913. **The Chattering Jackdaw** builds in church towers and

chimneys, and, like the Magpie and Jay, and a few others, makes its nest of sticks. Some birds line with mud or hair.

914. The Woodpecker makes no nest; breeds in holes in trees.

915. The Night-jar lays her two eggs in some natural hole in the earth.

916. The Bustard is now very rare in England.

917. The Ringdove builds in thick bushes, or hedges.

918. The Wood-pigeon in the hollows of old trees.

919. The Turtle-dove builds in fir trees; the nests are slight, in which she lays two white eggs.

920. The Thrush builds her nest in ivy, holly, or arbutus, and lays four or five pale blue eggs.

921. The Blackbird makes its nest in the hedge or bush, and lays five eggs.

922. The Fieldfare comes to us about the same time as the Swallow leaves England, and leaves again in April or May. The nests are usually found in the spruce fir.

923. The Swift comes to us from Africa in April, and leaves in September. Swifts return, year after year, to their old nest of mud and feathers, and if destroyed, build again in the very same spot.

924. The Nightingale, the sweetest of all our songsters, is usually heard about the 15th of April, and is abundant in various parts of England. Is very timid, and skilfully conceals its nest, 925.] laying its four or five eggs in a thick bush. The Blackcap, whose song is second only to the nightingale's, is known by the name of Mock-nightingale.

926. The Golden Oriole is 9½ inches in length, and occasionally visits Britain. Its plumage is brilliant yellow; it is a sweet songster; the nest is hung to the fork of a bough. The French say it is an ill omen to find an Oriole's nest.

927. The Redstart sometimes builds its nest, laying five or six eggs, in very strange places, as a flower pot, or in a box, and migrates from the south to Germany, Russia, Norway, Sweden.

928. The Gold-Crested Wren is the smallest of our songsters, and may be said to *hang* its nest, with its seven to ten eggs, from the bough of a tree,—the yew, or larch. In Ireland a custom of great antiquity prevails of hunting the Wren on Christmas-day.

931. The Pied-Wagtail is found all the year round in the southern parts of England, but migrates from the northern counties and Scotland at the approach of winter. This bird will remain ten or fifteen minutes at a time under water. The nest, with its

five eggs, is to be found near the water, in the trunk of a tree, a 936.] hole, or on the bank. PASTOR OUZEL is the locust bird of the East; they are abundant in India, when the bread-corn is ripe.

937. The Garden Warbler has a very sweet song. It is called Olive Fannet and Garden Fannet, and lays, in its nest of grass, moss, hair, &c., four or five greenish white eggs.

938. The Reed Warbler.—An elegant little waterside summer bird. Constructs its deep nest of reeds and grass, lined with wool and hair, between reed stems above the water. The pleasant banks of the Thames are enlivened by this little warbler.

THE REED WARBLER.

939. The Greater Titmouse.—The note of this bird has, owing to its harshness, been compared to the sharpening 940.] of a saw. The nest of the BLUE TITMOUSE, or BILLY BITER, with sometimes eighteen eggs, is very large. The 941.] MARSH TITMOUSE makes its nest in old willows, or trunks of old trees. The 942.] BEARDED TIT is a beautiful bird, and is found in Norfolk, Surrey, and Middlesex.

943. The Robin Redbreast associates more familiarly than almost any other bird with man. Its song is said to be indicative of the weather: thus, if it sing cheerfully, it is the unerring sign of fine weather; the nest is frequently on a bank, or by the roots of trees. The robin is a very pugnacious bird.

944. The Wheatear is very general throughout Britain, and abundant on the northern shores of the Mediterranean; the nest is large, and will often be found at the entrance of a rabbit warren. The bird is known by the names of Horsematch, Fallow-finch, Fallow-smith, Chats, Smither, Chickell, &c.

945. The Skylark makes its nest upon the ground. In its joyous song, by successive springs, it mounts higher and higher above its nest till it is lost to sight, although its warbles continue 946.] until it attains a high altitude. The lark is very abundant in Ireland, particularly near Belfast.

947. **Linnets** live to a great age, and are very docile, learning to whistle a tune as perfectly as the bullfinch. The nest of the
948.] Common Linnet is made of moss, grass-stalks, and wool.
949.] The eggs are bluish white, speckled with brown. The
950.] Mealey Linnet visits England only in the winter.

951. **The Canary** was not introduced into England until the 13th and 14th centuries; it is believed to have come originally from the Canary Islands, where they are a dusky grey colour; the attempt to rear them wild in Europe has never succeeded.

952. **The Pheasant** is supposed to have come originally from the banks of the Phasis, a river of ancient Colchis, falling into the Black Sea. The Pheasants from China are the Ringed, the Golden, and the Silver; from Sumatra, the Argus, nearly the size of a turkey, and the Impey, from the Himalayan mountains. Pheasants' eggs are cream-coloured, spotted with brown. When introduced into Europe is unknown. The pheasant's note is always heard on the approach of a thunder-storm.

953. **The Partridge** will lay her ten to twenty cream-coloured eggs in the nest of the Pheasant, which is found on the ground in a field of grass or corn. The Red-legged Partridge is a native of France, Italy, Guernsey, and Jersey.

954. **The Quail**, the smallest British bird of the poultry kind, runs rapidly. Quails visit Egypt in immense flights about harvest time, when the Arabs take them by thousands in a net.

955. **The Kingfisher** has a lovely plumage; the nest seems to be made of fish bones; the eggs are very round, and purely white.

956. **The Heron** builds its nest of sticks and wool, on rocks or in large trees. There are several kinds, as the Purple, the Great White, the Great Egret, the Little Egret, the Buff-backed, and the Squacco Heron.

957. **Grouse.**—There are four kinds of Grouse. Black Grouse
958.] are found on the Moors in England and Scotland, but not in Ire-
959.] land; Red Grouse are found in Great Britain, but in no
960.] other part of the world; White Grouse are seen only in the wildest and highest of the Scotch mountains; and the Capercaibrie or Cock of the Wood is now found only in one district of Scotland, though formerly abundant in the mountainous forests of Scotland and Ireland.

961. **Ducks.**—There are about twenty-eight species of Ducks.

962. **Turkeys.**—The Turkey is a native of Mexico.

963. **The Domestic Fowl** is of Indian origin.

964. The Common Guinea Fowl comes from Africa.

965. The Pipits, or Titlarks, are very similar to the Lark, both in appearance and habits. Pipits are found only in cold regions, especially in Siberia and Kamtschatka.

LINNET, WREN, GOLDFINCH; SNOW BUNTING, HERON.

966. The Tree Pipit makes its nest of grass, moss, and hair. The eggs would hardly be known from those of a woodlark. The Rock pipit is abundant in all parts of Britain.

967. The Great Pipit, or Richard's pipit, is a native of Africa. The yellow bunting, or yellow hammer, is well known. The nest is compactly made of moss, roots, and hair, and is usually found on a bank, or under a bush on the ground. The eggs are pale blue, marked with dark reddish brown.

968. The Song of Corn and Seed Buntings is very similar, they both make their nest of moss, lined with hair and fine grass. The CIRT BUNTING is peculiar to the sea coast. The eggs are white, spotted with brown, and slightly tinged with blue.

969. The Tree Sparrow is more abundant in Lincolnshire than any other part of England. This species builds in old trees or walls, and its nest is made of dry grass, lined with feathers. The eggs are dull white, speckled with light grey brown.

970, 971, 972. The Parrot, Nuthatch, and Hoopoe belong to the extensive family of climbers. The latter is a rare visitor to our isles; it builds in holes of trees. The appearance of a Nuthatch is said to be a sign of a wet summer.

973. Humming-birds.—The principal are the Ruby-throated, the Ruby-topaz, the Emerald-throated, the Long-tailed, the Sawbill, and the Vervain.

974. The Lisken visits us *only* in winter; it abounds in Germany, Norway, and Sweden, building in the tops of the pines.

975. The Greenfinch may sometimes be mistaken for the 976.] Canary, from the yellow colour of its plumage. The CHAFFINCH is much prized in Germany, on account of its song.

989. The Peacock, one of the most beautiful of the feathered race, is a native of India, where it is very abundant.

990. The Goose is of British origin.

994. Swans.—There are three species, natives of Europe. The 996. Whistling Swan is a periodical visitor to the Orkney Isles, but is seldom seen in England.

997. The Lapland Bunting is found only in the arctic regions.

998. The Snow Bunting is a native of North America.

999. The Goldfinch is a very conceited little bird, and always seems to find great pleasure at the sight of itself in a glass. It is a sweet and merry songster, very abundant throughout Europe.

1,000. The Bullfinch is called Pope, Alp, Nope, and Monk. Schools are formed at Hesse and Fulda for the purpose of teaching these little birds.

1,001 The Tailor-bird, a native of India, sews, with the long fibre of some plant, two leaves together, which, forming a deep nest, she lines with wool for her eggs.

1,002. The Social Weaver.—The nests of these birds are so enormous, that travellers have mistaken them for the home of a human being.

1,003. Bird's Nests.—(By M. S. C.)

"The Skylark's nest among the grass
And having corn is found,
The Robin's on a shady bank,
With oak leaves strewed around.

The Wren builds in an ivied thorn,
Or old and ruined wall;
The mossy nest so covered in,
You scarce can see at all.

The Martins build their nests of clay,
In rows beneath the eaves;
The silvery lichens, moss, and hair,
The Chaffinch interweaves.

The Cuckoo makes no nest at all,
But through the wood she strays,
Until she finds one snug and warm,
And there one egg she lays.

The Sparrow has a nest of hay,
With feathers warmly lined;
The Ringdove's careless nest of sticks,
On lofty trees we find.

Rooks build together in a wood,
And often disagree,
The Owl will build inside a barn,
Or in a hollow tree.

The Blackbird's nest of grass & mud,
In bush or bank is found;
The Lapwing's sparkly spotted eggs
Are laid upon the ground.

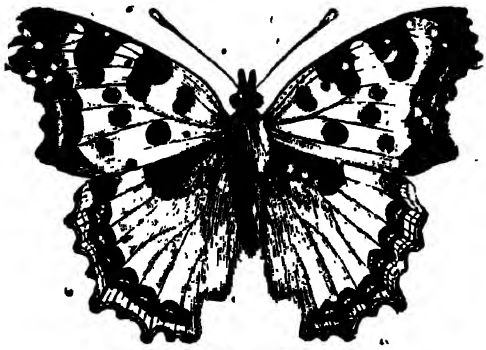
The Magpie's nest is made with thorns,
In leafless tree or hedge;
The wild Duck and the Water-hen,
Build by the water's edge.

Birds build their nests from year to year,
According to their kinds,
Some very neat and beautiful,
Some simpler ones we find.

The habits of each little bird,
And all its patient skill,
Are surely taught by God himself,
And ordered by His will.

BUTTERFLIES.

1,004. There are several interesting British species of butterflies: some of the foreign kinds are very splendid; and so short-lived are they, that there are frequently ten generations in a year. The SWALLOW-



TORTOISE-SHELL BUTTERFLY.

1,005.] TAIL butterfly, the largest known in England, abounds in Yarmouth more than elsewhere, and is far less timid than most butterflies. The caterpillar is pale green, with black ring. The BRIMSTONE butterfly is common *only* in the south of England. It is remarkable that it *never* settles with its wings open. The female is far paler than the male. The caterpillar is dark green, dotted with
1,007.] black. The CLOUDED YELLOW butterfly is pretty generally distributed, though more common in the south of England than elsewhere. The caterpillar is dark green, with white, yellow, and
1,008.] red stripes. The LARGE WHITE is one of the most common.
1,009.] The caterpillar is yellow, with black dots. The GREEN-VEINED CABBAGE is very general *wherever cabbages are grown*. The cater-
1,010.] pillar is green, with yellow and red spots. The ORANGE-TIPPED is very abundant throughout England. The female is white, and invariably selects white flowers to rest upon during night. The caterpillar is green, with small black dots and a
1,011.] white stripe on each side. The MARBLE WHITE is sometimes called the half-mourner; and feeds on grass. The caterpillar is green, with three yellow lines *down* the back. The SPECKLED
1,013.] WOOD is very common. The caterpillar is dull green, with
1,014.] a white stripe on each side. The WALL butterfly always takes a zigzag flight. The caterpillar is green, with three very deli-
1,015.] cate white lines down the back. The MEADOW BROWN is very general. The caterpillar is pale green, with two white stripes. The
1,016.] RINGLET is very abundant in woods, and feeds on grass. The caterpillar is grey, with one dark and two pale stripes. The
1017.] LARGE HEATH, or gate-keeper butterfly, is abundant in all

parts of the kingdom. The caterpillar is green with two red lines.
1,018.] The SMALL HEATH is a pretty little butterfly. The caterpillar
is bright green, with three green stripes bordered with white. The
1,019.] PURPLE EMPEROR is one of the most beautiful of our native
butterflies. It only settles on the very top of high trees, therefore
can be but rarely seen. The caterpillar is pale green, with three
1,020.] yellow stripes. The PAINTED LADY is very generally distri-
buted; it is particularly fond of the blue corn flower. The caterpillar
1,021.] is brown, with a yellow stripe *round* the body. The RED
ADMIRAL is very plentiful; it feeds entirely on the Michaelmas
daisy. The caterpillar feeds on the nettle, and is pale yellow, with
1,022.] brown spots. The PEACOCK butterfly is rare in Scotland and
the north of England, but is abundant elsewhere. The caterpillar
is black, dotted with white, and is easily irritated. The LARGE
1,023.] TORTOISE-SHELL is common *only* in the south of England.
Its markings are very similar to tortoise-shell. The caterpillar is
1,024.] tawny, with dark stripes. The SMALL TORTOISE-SHELL is
called in Scotland the witch's butterfly. The caterpillar is dark,
1,025.] pale lines, and black heads. The SILVER-WASHED FRITIL-
LARY is very plentiful in the south of England. It feeds on the
dog violet and raspberry. The caterpillar is black, with sulphur-
coloured lines down the back, and dark yellow lines down the
1,026.] sides. The DARK GREEN FRITILLARY is found chiefly in
woods. The caterpillar is black, with pale yellow lines, and red
1,027.] spots. The PEARL BORDERED FRITILLARY is found by the
roadside. It is very common in all parts of England. The cater-
pillar feeds on violets. It is black, with three white stripes. The
1,028.] PURPLE HAIR-STREAK is rare in the north of England. The
caterpillar feeds on the oak leaf. It is short and thick, red brown,
1,029.] and striped with black. The GREEN HAIR-STREAK is com-
1,030.] mon. The COPPER butterfly is very common throughout
1,031.] Great Britain. It is very pugnacious. The HOLLY-BLUE
butterfly is found only where the holly is abundant. The BEDFORD
1,032, 1,033.] BLUE is the smallest British butterfly. The CHALK
HILL is blue, and found on chalky hills and downs. The COM-
1,034, 1,035.] MON BLUE butterfly is abundant everywhere. SKIP-
PERS are considered the connecting link between butterflies and
1,036.] moths. The GRIZZLED SKIPPER is found in moist lands,
1,037.] The LARGE SKIPPER is rich brown, with light spots. The
caterpillar is green, with dark lines and numerous black spots. The
1,038.] caterpillar of the SMALL SKIPPER is dark green, with four

1,039.] black and white stripes. The BROWN ARGUS is found only in the south of England.

1,041. Moths are very numerous, as—The Brimstone, Buff-tip, Burnet, Clear-wing, Drinker, Elephant Hawk, Emperor, Gold-tailed, Lackey, Long-horn, Magpie, Oak, Plume Moths, Privet Hawk, Tiger, Vapourer, and the Russ.

1,059. Bees swarm in some of the forests of India. In South Africa a little grey bird called the honey guide, and a little animal called the honey ratted, are equally clever in finding out the hidden nests. The honey bee has six legs and four wings. Its body is covered with soft hairs. The queen and mother of the hive is more slender in shape than the other bees. She does no work, and is treated with great respect. The drones or males are larger than the females, and have no sting. The eggs, which are laid early in the spring, remain for three days, and then a little worm is hatched. They are fed for five or six days by the nurse bees, who then make a covering of wax for each cell, mixing the wax with pollen. The worm then wraps round itself a silken cocoon, like that of a silkworm. In this it remains for some time, and when it again enters upon life it is a bee. Bees have many enemies, such as wasps, ants, birds, spiders, and some kinds of moths. Bees have a great dread of rain. The honeycomb is formed of wax. Honey was much used as an article of food before sugar became so plentiful.

1,060. Silkworms.—Silk is the production of a caterpillar from the eggs of a moth, called the silkworm; each moth lays about 200 eggs; from each egg comes a small worm, which in thirty days is considered full grown. It then ceases to eat, and the worm or chrysalis, as it is now called, forms in ten days its ball or cocoon of silk. The dark brown grub changes into a white moth, which, after laying its eggs for the next year, dies. Silkworms change their skins four times before they arrive at their full size. They are fed on mulberry or lettuce leaves, but when they have once tasted mulberry leaves they will not go back to the lettuces. The silk produced by silkworms fed on mulberry leaves is far superior in quality. The white mulberry tree is a native of China. The eggs of the silkworm were brought to Europe from China in the hollow of a cane.

INDEX.

N B.—The principal division of subjects will be found by reference to the Nos. under the following heads:—Manufactures. Distinguished Persons. Cathedrals, Abbeys, Priories, Castles, Colleges, Minerals, Metals, Trees, Fruits, Flowers, Birds, Butterflies. General information is arranged in alphabetical order.

LIST OF ILLUSTRATIONS.

THE END.